

UCID- 21200

Fission Fragment Angular Distribution
for the $^{232}\text{Th}(\text{n},\text{f})$ Reaction

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September 1987

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Work performed under the auspices of the U.S. Department of Energy by the Lawrence Livermore Laboratory under Contract W-7405-Eng-48.

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 $^{232}\text{Th}(n,f)$ Reaction**

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Abstract

**Tables of the angular distribution of fission fragments produced in the
 $^{232}\text{Th}(n,f)$ reaction are presented for $0.72 \leq E_n(\text{MeV}) \leq 31.0$.**

An experiment has been conducted to determine the angular distribution of fission fragments produced in the $^{232}\text{Th}(n,f)$ reaction, as a function of incident neutron energy. Full details of the experimental techniques and results for limited neutron energies have been presented in the literature.¹⁻³ This report presents a tabulation of the results over the full range of incident neutron energy for which data reduction was done, $0.72 \leq E_n(\text{MeV}) \leq 31.0$, in bins $\Delta E = 40 \text{ keV}$. Accuracy of the results reflect the changing product of cross-section and neutron flux as a function of incident neutron energy and, of course, the running time of ~ 1 week. The neutron flux was approximately Maxwellian, with characteristic temperature 1.6 MeV. The decreasing statistical accuracy of the data above $E_n = 3 \text{ MeV}$ primarily reflects the decreasing neutron flux.

Briefly, ^{232}Th samples thick compared with the fission fragment range were mounted before planes of multiwire counters. The counters were operated in an avalanche mode. The counting gas (CH_{10}) pressure of 10 Torr means that fragment trajectories were not significantly perturbed by collisions with the counting gas before entering the active region of the counter. The targets were irradiated with a white source of neutrons produced at the Lawrence Livermore National Laboratory 100-MeV Electron Linac Facility, and neutron energy was determined using the time-of-flight technique. The flight path was 66m. Fragment trajectory was determined by using ray tracing techniques. Data was collected with the code MULTI,⁴ and data reduction was accomplished off-line with the code KIOWA.⁵

Table I lists the angular distribution coefficients resulting from a Legendre polynomial fit to the data using least-squares techniques,

$$W(\theta) = I_f [1 + A_k P_k(\cos \theta)], \quad k = 2, 4, 6. \quad (1)$$

The fragment counter bias (~ 25 MeV) was such that multiple scattering of the fragments in the target does not appreciably distort the measured angular distribution.

Errors are statistical. The value of χ^2 given by

$$\chi^2 = \frac{1}{f} \sum_i \frac{[x_i(\text{exp}) - x_i(\text{fit})]^2}{x_i^2(\text{error})} \quad (2)$$

where $x_i(\text{exp})$ represents the data point, $x_i(\text{fit})$ represents the calculated value, $x_i^2(\text{error})$ represents the error associated with the data point $x_i(\text{exp})$, and f denotes the degrees of freedom. The fit to $k = 6$ is meaningful only in a few cases.

References

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5. KIOWA together with the interface to MULTI was obtained from the Fermi National Laboratory Computation Department.

Table I. Legendre polynomial expansion coefficients for $^{232}\text{Th}(n,f)$ as a function of neutron energy. The notation is such that the power of 10 for the entry is given by $\pm X$. The energy step is 40 keV.

TABLE I

En(MeV)	χ^2	A_0	EA_0	A_2	EA_2	A_4	EA_4	A_6	EA_6
0.720	6.75-1	2.40-1	9.43-2	-5.32-1	1.03+0	5.29-1	1.01+0	-6.37-1	1.36+0
0.760	4.79-1	4.17-1	1.78-1	-1.10+0	1.03+0	1.01+0	9.37-1	-5.80-1	7.55-1
0.800	1.13+0	3.60-1	1.15-1	3.01-2	7.80-1	1.06+0	8.29-1	9.85-2	1.04+0
0.840	1.16+0	5.92-1	1.12-1	3.82-1	4.15-1	-2.67-1	5.42-1	4.50-1	5.62-1
0.880	1.55+0	9.50-1	1.70-1	3.04-1	4.01-1	-1.08-1	5.17-1	-4.35-1	5.50-1
0.920	9.55-1	1.40+0	1.76-1	2.59-1	2.76-1	8.70-2	3.46-1	-3.91-2	3.89-1
0.960	4.60-1	1.62+0	1.81-1	5.92-1	2.52-1	8.30-2	3.12-1	-1.55-1	3.46-1
1.000	1.04+0	1.71+0	1.86-1	5.95-1	2.48-1	2.44-1	3.06-1	1.37-1	3.50-1
1.040	1.22+0	2.02+0	1.97-1	6.32-1	2.21-1	3.13-1	2.55-1	1.26-3	2.90-1
1.080	6.11-1	2.43+0	2.10-1	8.61-1	2.02-1	-5.79-3	2.46-1	1.19-1	2.91-1
1.120	9.15-1	3.16+0	2.34-1	8.88-1	1.77-1	-1.35-1	2.20-1	-4.86-1	2.41-1
1.160	1.63+0	5.62+0	3.15-1	6.93-1	1.25-1	-2.73-1	1.59-1	2.45-2	1.86-1
1.200	1.38+0	9.06+0	3.86-1	7.88-1	9.41-2	-5.58-1	1.22-1	-1.13-1	1.38-1
1.240	1.35+0	1.49+1	5.09-1	6.73-1	7.50-2	-3.59-1	9.42-2	-1.71-1	1.07-1
1.280	1.48+0	2.32+1	6.59-1	3.85-1	5.91-2	-3.94-1	7.61-2	3.43-2	8.44-2
1.320	9.05-1	3.04+1	7.78-1	1.96-1	5.26-2	-3.68-1	6.88-2	4.62-2	7.28-2
1.360	4.07-1	3.80+1	8.90-1	9.73-2	4.85-2	-2.89-1	6.23-2	-1.41-1	6.46-2
1.400	1.89+0	4.45+1	9.65-1	7.65-2	4.46-2	-3.35-1	5.76-2	-1.94-1	5.82-2
1.440	2.06+0	4.97+1	1.02+0	2.23-2	4.17-2	-3.77-1	5.40-2	-1.01-1	5.49-2
1.480	1.52+0	5.41+1	1.07+0	-4.87-2	4.02-2	-4.30-1	5.27-2	2.33-2	5.26-2
1.520	1.26+0	5.47+1	1.10+0	-1.30-1	4.10-2	-4.09-1	5.31-2	-6.23-2	5.12-2
1.560	9.04-1	5.55+1	1.11+0	-1.66-1	4.14-2	-2.45-1	5.25-2	-8.72-2	5.17-2
1.600	1.55+0	5.51+1	1.11+0	-1.72-1	4.18-2	-2.05-1	5.24-2	-1.59-1	5.11-2
1.640	1.47+0	5.32+1	1.09+0	-1.49-1	4.22-2	-1.72-1	5.25-2	-5.01-2	5.38-2
1.680	1.05+0	4.63+1	1.02+0	-9.40-2	4.58-2	-7.22-2	5.76-2	-1.30-2	5.97-2
1.720	1.02+0	4.48+1	9.93-1	6.89-3	4.68-2	-9.19-4	5.88-2	-3.22-2	6.21-2
1.760	1.18+0	4.11+1	9.21-1	1.98-1	4.73-2	-1.30-1	5.98-2	-9.45-2	6.50-2
1.800	1.34+0	4.19+1	9.46-1	9.77-2	4.76-2	8.69-3	5.96-2	-3.31-2	6.32-2
1.840	6.19-1	4.21+1	9.41-1	1.53-1	4.72-2	-7.56-2	5.96-2	-6.86-3	6.45-2
1.880	1.32+0	4.19+1	9.30-1	2.34-1	4.74-2	5.23-3	5.95-2	-4.83-2	6.51-2
1.920	8.30-1	4.36+1	9.62-1	1.91-1	4.76-2	1.23-1	5.93-2	-4.93-2	6.45-2
1.960	8.82-1	4.19+1	9.39-1	1.98-1	4.82-2	7.02-2	6.03-2	7.60-2	6.54-2
2.000	7.86-1	4.12+1	9.25-1	2.35-1	4.82-2	2.34-2	6.10-2	8.52-2	6.68-2
2.040	4.96-1	3.89+1	8.90-1	2.80-1	4.91-2	1.85-2	6.12-2	-1.14-2	6.74-2
2.080	1.18+0	3.92+1	9.02-1	2.72-1	4.99-2	1.24-1	6.28-2	2.31-2	6.81-2
2.120	7.59-1	3.68+1	8.80-1	2.39-1	5.20-2	2.23-1	6.45-2	3.66-2	7.00-2
2.160	6.21-1	3.75+1	8.99-1	1.20-1	5.14-2	1.49-1	6.39-2	5.39-2	6.94-2
2.200	1.11+0	3.48+1	8.62-1	1.37-1	5.28-2	1.52-1	6.54-2	-1.77-2	7.13-2
2.240	4.35-1	3.13+1	8.11-1	1.79-1	5.53-2	8.53-2	6.88-2	-6.65-2	7.41-2
2.280	1.03+0	3.02+1	7.90-1	2.38-1	5.60-2	6.50-2	6.99-2	-7.44-2	7.54-2
2.320	9.40-1	2.68+1	7.38-1	2.67-1	5.89-2	-1.64-2	7.37-2	2.93-2	8.10-2
2.360	5.91-1	2.71+1	7.59-1	1.54-1	6.01-2	8.09-2	7.54-2	-1.72-1	8.03-2
2.400	1.23+0	2.37+1	6.98-1	2.63-1	6.36-2	3.71-2	7.93-2	-6.08-2	8.79-2
2.440	6.41-1	2.23+1	6.60-1	4.20-1	6.44-2	-8.30-3	8.15-2	1.27-1	9.04-2
2.480	1.27+0	2.40+1	7.06-1	1.76-1	6.24-2	-2.91-3	7.77-2	1.16-1	8.57-2
2.520	6.77-1	2.29+1	6.99-1	1.08-1	6.49-2	5.77-2	8.13-2	9.38-2	8.76-2
2.560	8.37-1	2.21+1	6.86-1	1.59-1	6.66-2	1.30-1	8.27-2	-5.40-2	8.99-2
2.600	9.13-1	2.17+1	6.78-1	1.44-1	6.68-2	4.63-2	8.33-2	-1.24-1	8.96-2
2.640	1.79+0	2.13+1	6.74-1	7.65-2	6.64-2	6.05-2	8.10-2	-1.39-1	8.68-2
2.680	1.21+0	1.92+1	6.16-1	3.45-1	6.89-2	-7.31-2	8.65-2	3.74-2	9.62-2
2.720	5.68-1	1.93+1	6.33-1	1.92-1	7.00-2	2.62-2	8.83-2	1.26-1	9.44-2
2.760	5.68-1	2.01+1	6.59-1	1.09-1	7.04-2	1.33-1	8.81-2	-5.15-2	9.34-2
2.800	3.94-1	1.97+1	6.45-1	1.88-1	7.07-2	1.53-1	8.77-2	2.80-2	9.51-2
2.840	1.02+0	2.02+1	6.59-1	6.72-2	6.91-2	1.34-1	8.45-2	-5.59-3	9.33-2
2.880	3.81-1	1.83+1	6.24-1	1.88-1	7.34-2	1.36-1	9.14-2	-1.29-1	9.89-2
2.920	1.29+0	1.83+1	6.27-1	2.05-1	7.45-2	1.55-1	9.42-2	-1.02-1	9.89-2
2.960	9.59-1	1.70+1	5.77-1	3.22-1	7.18-2	-1.85-1	9.03-2	-1.75-1	1.00-1
3.000	1.93+0	1.62+1	5.78-1	1.67-1	7.45-2	-1.23-1	9.25-2	-1.20-1	1.02-1
3.040	1.21+0	1.69+1	6.06-1	7.44-2	7.67-2	8.53-2	9.56-2	-1.44-1	9.90-2
3.080	8.04-1	1.63+1	6.02-1	9.97-3	7.90-2	2.20-1	9.73-2	1.73-2	1.04-1
3.120	6.31-1	1.67+1	5.98-1	1.32-1	7.70-2	1.20-1	9.60-2	-9.11-3	1.03-1

En(MeV)	χ^2	A_Q	EA_0	A_2	EA_2	$A4$	$EA4$	$A6$	$EA6$
3.160	7.91-1	1.44+1	5.52-1	1.61-1	8.16-2	1.10-1	1.02-1	1.95-1	1.12-1
3.200	8.53-1	1.54+1	5.70-1	1.39-1	7.82-2	5.66-2	9.67-2	5.52-2	1.06-1
3.240	1.37+0	1.52+1	5.90-1	-1.02-1	8.31-2	1.18-1	1.03-1	-6.43-2	1.04-1
3.280	9.32-1	1.42+1	5.45-1	1.21-1	8.07-2	-7.16-2	1.03-1	6.77-3	1.09-1
3.320	1.27+0	1.36+1	5.39-1	1.27-1	8.47-2	1.23-1	1.06-1	-5.72-3	1.11-1
3.360	1.04+0	1.38+1	5.42-1	1.76-1	8.48-2	2.42-1	1.05-1	-4.82-2	1.12-1
3.400	1.70+0	1.29+1	5.28-1	1.22-1	8.87-2	8.68-2	1.11-1	2.18-2	1.17-1
3.440	5.24-1	1.36+1	5.50-1	-2.69-2	8.53-2	1.43-1	1.05-1	-1.92-1	1.11-1
3.480	1.22+0	1.23+1	5.07-1	1.73-1	8.77-2	-8.96-3	1.10-1	-1.37-3	1.21-1
3.520	1.26+0	1.22+1	5.04-1	1.70-1	8.80-2	6.53-2	1.09-1	-3.79-2	1.19-1
3.560	2.21+0	1.20+1	5.16-1	4.45-2	9.17-2	1.62-1	1.15-1	-4.83-2	1.21-1
3.600	1.08+0	1.08+1	4.72-1	2.13-1	9.35-2	5.05-2	1.19-1	-7.05-2	1.29-1
3.640	8.62-1	1.11+1	4.85-1	1.04-1	9.20-2	1.02-1	1.13-1	3.58-2	1.25-1
3.680	1.24+0	1.15+1	4.88-1	1.81-1	8.91-2	-2.51-2	1.14-1	4.05-2	1.25-1
3.720	1.56+0	1.14+1	4.98-1	1.05-1	9.43-2	1.35-1	1.17-1	-4.34-2	1.28-1
3.760	1.49+0	1.07+1	4.90-1	2.53-3	9.88-2	2.24-1	1.21-1	-1.38-1	1.26-1
3.800	1.95+0	1.10+1	4.87-1	8.18-2	9.37-2	2.16-1	1.16-1	-1.80-1	1.23-1
3.840	1.10+0	1.00+1	4.68-1	3.05-3	9.81-2	8.39-2	1.21-1	-2.15-1	1.27-1
3.880	7.37-1	1.06+1	4.76-1	9.70-2	9.59-2	7.12-2	1.19-1	1.12-1	1.32-1
3.920	1.14+0	9.62+0	4.48-1	1.76-1	9.89-2	-2.09-2	1.27-1	5.55-2	1.34-1
3.960	2.00+0	9.69+0	4.37-1	3.91-1	9.79-2	-2.06-3	1.24-1	-1.58-1	1.37-1
4.000	2.15+0	9.83+0	4.40-1	2.69-1	9.33-2	-2.33-1	1.18-1	-7.78-2	1.32-1
4.040	4.90-1	1.01+1	4.64-1	1.30-1	9.83-2	8.83-2	1.23-1	-1.37-1	1.35-1
4.080	9.51-1	9.72+0	4.53-1	1.26-1	9.87-2	2.66-2	1.24-1	-1.03-1	1.33-1
4.120	1.39+0	8.68+0	4.14-1	3.81-1	1.03-1	-2.43-1	1.37-1	1.21-1	1.48-1
4.160	6.18-1	9.92+0	4.58-1	1.61-1	9.85-2	9.30-2	1.22-1	-1.93-1	1.31-1
4.200	8.11-1	9.26+0	4.48-1	8.58-2	1.04-1	1.28-1	1.29-1	1.20-1	1.38-1
4.240	1.53+0	9.11+0	4.41-1	1.87-1	1.05-1	1.77-1	1.30-1	-1.00-1	1.38-1
4.280	2.24+0	8.40+0	4.24-1	-4.39-2	1.03-1	-1.58-1	1.31-1	-1.39-1	1.32-1
4.320	1.22+0	8.99+0	4.29-1	1.65-1	9.94-2	-1.73-1	1.25-1	1.87-1	1.39-1
4.360	6.09-1	8.89+0	4.34-1	1.33-1	1.04-1	-4.47-3	1.31-1	-2.56-1	1.40-1
4.400	1.20+0	8.86+0	4.41-1	-3.92-2	1.04-1	1.70-3	1.31-1	-3.89-2	1.32-1
4.440	1.18+0	9.08+0	4.57-1	-1.60-1	1.07-1	1.47-1	1.31-1	-1.98-1	1.32-1
4.480	7.56-1	8.48+0	4.29-1	6.61-2	1.08-1	9.65-2	1.33-1	-3.15-1	1.40-1
4.520	3.83-1	8.30+0	4.17-1	2.17-1	1.08-1	-3.06-2	1.36-1	-3.45-2	1.47-1
4.560	1.07+0	7.97+0	4.10-1	3.69-2	1.06-1	-1.71-1	1.37-1	1.54-1	1.43-1
4.600	8.88-1	7.45+0	3.84-1	3.11-1	1.10-1	-2.40-1	1.44-1	1.85-1	1.57-1
4.640	1.11+0	7.44+0	3.90-1	2.33-1	1.11-1	-7.97-2	1.41-1	5.52-2	1.53-1
4.680	1.56+0	8.39+0	4.17-1	1.07-1	1.03-1	-2.70-2	1.27-1	1.31-1	1.39-1
4.720	1.20+0	7.73+0	4.08-1	8.03-2	1.12-1	-2.12-2	1.41-1	-1.16-1	1.47-1
4.760	4.11-1	7.41+0	3.92-1	1.54-1	1.12-1	-1.03-1	1.41-1	-3.83-2	1.49-1
4.800	1.16+0	8.21+0	4.25-1	9.35-2	1.12-1	2.17-1	1.39-1	-7.87-2	1.45-1
4.840	8.10-1	6.98+0	3.88-1	1.20-1	1.20-1	8.65-2	1.52-1	-2.90-1	1.64-1
4.880	7.68-1	7.47+0	3.97-1	1.04-1	1.11-1	-1.19-1	1.43-1	-1.71-1	1.49-1
4.920	4.79-1	7.26+0	3.90-1	1.96-1	1.15-1	2.05-1	1.41-1	1.29-1	1.57-1
4.960	1.20+0	6.81+0	3.73-1	2.56-1	1.18-1	-1.22-1	1.50-1	1.15-1	1.64-1
5.000	5.98-1	7.28+0	3.83-1	2.66-1	1.12-1	-5.95-2	1.39-1	-2.15-1	1.49-1
5.040	1.00+0	7.36+0	4.01-1	6.69-2	1.17-1	2.51-1	1.43-1	-1.38-1	1.51-1
5.080	1.37+0	6.94+0	3.73-1	4.24-1	1.19-1	1.38-1	1.47-1	-3.78-1	1.61-1
5.120	9.31-1	6.74+0	3.78-1	1.53-1	1.20-1	6.29-2	1.49-1	-6.60-2	1.54-1
5.160	5.09-1	6.21+0	3.51-1	3.42-1	1.22-1	-1.16-1	1.56-1	-2.68-2	1.70-1
5.200	1.46+0	6.64+0	3.81-1	4.37-3	1.21-1	1.18-1	1.49-1	4.53-2	1.56-1
5.240	9.97-1	6.76+0	3.92-1	-9.46-2	1.24-1	1.58-1	1.54-1	8.07-3	1.63-1
5.280	1.99+0	5.98+0	3.42-1	3.72-1	1.23-1	-1.21-1	1.61-1	1.98-1	1.76-1
5.320	1.11+0	6.81+0	3.83-1	6.11-2	1.19-1	8.45-2	1.49-1	-9.00-2	1.59-1
5.360	4.87-1	6.08+0	3.42-1	4.47-1	1.23-1	-6.87-2	1.53-1	-3.26-1	1.69-1
5.400	9.65-1	6.65+0	3.76-1	1.47-1	1.21-1	2.91-2	1.52-1	-1.40-1	1.64-1
5.440	1.02+0	6.65+0	3.72-1	1.29-1	1.17-1	-8.16-2	1.47-1	1.10-2	1.53-1
5.480	1.41+0	5.72+0	3.24-1	4.45-1	1.18-1	-4.00-1	1.49-1	-1.75-2	1.76-1
5.520	3.29-1	6.22+0	3.55-1	2.61-1	1.21-1	-1.24-1	1.54-1	-1.05-1	1.65-1
5.560	9.69-1	5.91+0	3.57-1	8.96-3	1.26-1	-1.13-1	1.63-1	-3.44-1	1.62-1
5.600	1.62+0	5.89+0	3.53-1	2.12-1	1.29-1	-6.72-2	1.68-1	2.34-1	1.77-1
5.640	1.05+0	5.46+0	3.19-1	4.00-1	1.21-1	-4.28-1	1.59-1	7.98-2	1.74-1
5.680	1.31+0	6.58+0	3.76-1	1.38-1	1.23-1	2.40-1	1.51-1	-1.56-1	1.56-1
5.720	7.02-1	5.93+0	3.52-1	2.43-1	1.29-1	-6.31-2	1.65-1	4.68-3	1.76-1
5.760	4.71-1	6.36+0	3.61-1	2.70-1	1.22-1	5.48-2	1.55-1	2.78-1	1.71-1

En(MeV)	χ^2	A_0	EA_0	A_2	EA_2	$A4$	$EA4$	$A6$	$EA6$
5.800	9.15-1	7.30+0	3.79-1	3.90-1	1.13-1	-1.63-2	1.42-1	9.33-2	1.60-1
5.840	1.02+0	6.70+0	3.62-1	4.50-1	1.19-1	1.47-1	1.46-1	-1.29-1	1.67-1
5.880	8.88-1	6.50+0	3.52-1	4.30-1	1.16-1	-7.19-4	1.43-1	2.23-1	1.65-1
5.920	1.01+0	6.68+0	3.53-1	5.20-1	1.16-1	-8.64-2	1.44-1	-1.77-1	1.56-1
5.960	1.55+0	6.87+0	3.66-1	4.87-1	1.19-1	3.36-1	1.45-1	9.26-2	1.62-1
6.000	6.98-1	7.96+0	4.02-1	3.90-1	1.12-1	2.96-1	1.39-1	2.17-1	1.54-1
6.040	9.04-1	6.98+0	3.57-1	6.74-1	1.16-1	2.48-1	1.42-1	3.82-1	1.63-1
6.080	6.08-1	7.29+0	3.65-1	6.09-1	1.12-1	-2.37-2	1.41-1	3.40-1	1.60-1
6.120	1.42+0	7.91+0	3.83-1	6.47-1	1.10-1	2.01-1	1.35-1	1.28-1	1.61-1
6.160	5.48-1	8.13+0	3.99-1	4.63-1	1.09-1	1.23-1	1.35-1	-3.94-2	1.50-1
6.200	6.25-1	8.20+0	3.78-1	8.37-1	1.08-1	1.88-1	1.31-1	3.01-1	1.53-1
6.240	9.89-1	8.12+0	3.83-1	7.35-1	1.09-1	6.95-2	1.35-1	2.23-1	1.57-1
6.280	1.39+0	8.31+0	3.92-1	6.30-1	1.07-1	2.29-1	1.28-1	1.87-1	1.53-1
6.320	6.03-1	8.82+0	4.00-1	7.13-1	1.04-1	1.62-1	1.27-1	2.43-1	1.50-1
6.360	8.86-1	9.62+0	4.21-1	6.70-1	1.00-1	1.90-1	1.22-1	7.16-2	1.40-1
6.400	1.05+0	9.88+0	4.11-1	8.14-1	9.58-2	2.67-2	1.16-1	2.93-1	1.39-1
6.440	9.35-1	9.23+0	4.08-1	7.13-1	1.01-1	8.76-2	1.23-1	1.40-2	1.38-1
6.480	1.48+0	9.13+0	4.11-1	6.67-1	1.03-1	1.01-1	1.27-1	4.09-2	1.43-1
6.520	1.33+0	1.01+1	4.32-1	7.28-1	9.98-2	3.21-1	1.23-1	4.57-1	1.42-1
6.560	7.75-1	1.03+1	4.42-1	6.20-1	9.91-2	3.58-1	1.19-1	2.97-2	1.37-1
6.600	1.11+0	1.00+1	4.09-1	9.03-1	9.50-2	-2.58-2	1.15-1	2.23-1	1.36-1
6.640	1.20+0	1.00+1	4.21-1	7.67-1	9.70-2	6.30-2	1.19-1	1.50-1	1.42-1
6.680	6.06-1	1.06+1	4.46-1	6.43-1	9.64-2	2.10-1	1.18-1	2.76-2	1.36-1
6.720	1.05+0	1.05+1	4.29-1	7.45-1	9.36-2	7.30-2	1.12-1	1.58-1	1.34-1
6.760	8.07-1	9.67+0	4.19-1	7.47-1	1.01-1	2.01-1	1.24-1	2.27-1	1.44-1
6.800	5.78-1	1.17+1	4.75-1	5.49-1	9.19-2	4.21-1	1.11-1	3.46-1	1.31-1
6.840	4.35-1	1.14+1	4.78-1	4.76-1	9.40-2	3.19-1	1.16-1	-4.76-2	1.30-1
6.880	1.10+0	1.07+1	4.56-1	5.57-1	9.74-2	4.21-1	1.18-1	3.80-2	1.37-1
6.920	1.08+0	1.05+1	4.47-1	5.92-1	9.63-2	2.85-1	1.17-1	1.20-1	1.33-1
6.960	1.24+0	1.05+1	4.40-1	6.86-1	9.55-2	1.61-1	1.19-1	3.66-1	1.39-1
7.000	4.85-1	1.08+1	4.65-1	4.86-1	9.79-2	4.28-1	1.20-1	-1.43-1	1.34-1
7.040	1.04+0	1.05+1	4.50-1	5.93-1	9.90-2	4.74-1	1.17-1	-1.42-1	1.33-1
7.080	1.84+0	8.72+0	4.00-1	7.68-1	1.08-1	3.49-1	1.31-1	2.64-1	1.57-1
7.120	5.10-1	1.04+1	4.56-1	5.48-1	1.02-1	5.07-1	1.25-1	6.05-2	1.36-1
7.160	8.37-1	1.14+1	4.86-1	3.78-1	9.50-2	3.97-1	1.17-1	-1.53-1	1.28-1
7.200	6.81-1	1.03+1	4.51-1	4.10-1	9.52-2	1.20-1	1.17-1	6.44-2	1.29-1
7.240	8.58-1	9.35+0	4.21-1	5.49-1	1.00-1	5.92-2	1.26-1	2.49-1	1.45-1
7.280	1.92+0	9.63+0	4.14-1	7.00-1	9.66-2	2.65-2	1.19-1	3.67-1	1.42-1
7.320	1.08+0	9.22+0	4.23-1	5.24-1	1.03-1	1.67-1	1.28-1	1.13-1	1.46-1
7.360	1.18+0	9.33+0	4.38-1	4.45-1	1.07-1	4.23-1	1.30-1	-6.11-2	1.44-1
7.400	6.46-1	9.80+0	4.40-1	5.35-1	1.03-1	3.73-1	1.27-1	1.33-1	1.40-1
7.440	9.90-1	9.21+0	4.21-1	5.63-1	1.03-1	2.17-1	1.28-1	1.08-2	1.43-1
7.480	5.22-1	9.17+0	4.35-1	3.94-1	1.06-1	4.57-1	1.31-1	-2.94-3	1.44-1
7.520	1.21+0	8.91+0	4.19-1	5.92-1	1.09-1	3.64-1	1.34-1	-9.57-2	1.47-1
7.560	8.93-1	8.65+0	4.05-1	5.64-1	1.05-1	7.25-2	1.33-1	2.85-1	1.50-1
7.600	1.62+0	8.08+0	3.93-1	5.01-1	1.07-1	1.32-1	1.32-1	2.77-2	1.47-1
7.640	1.13+0	8.31+0	3.98-1	6.03-1	1.09-1	3.60-1	1.30-1	1.16-1	1.50-1
7.680	1.02+0	7.58+0	3.82-1	5.29-1	1.13-1	3.77-1	1.35-1	1.60-3	1.57-1
7.720	2.19+0	7.66+0	3.89-1	5.54-1	1.16-1	3.15-1	1.45-1	6.71-3	1.60-1
7.760	1.15+0	7.81+0	3.98-1	3.59-1	1.12-1	2.26-1	1.40-1	4.00-2	1.53-1
7.800	9.11-1	7.37+0	3.81-1	3.89-1	1.12-1	3.68-2	1.40-1	8.65-2	1.56-1
7.840	8.99-1	7.10+0	3.73-1	4.77-1	1.17-1	1.18-1	1.47-1	2.69-1	1.67-1
7.880	1.68+0	7.04+0	3.86-1	2.76-1	1.21-1	4.72-1	1.46-1	-9.24-2	1.60-1
7.920	1.18+0	7.54+0	3.91-1	4.18-1	1.16-1	3.30-1	1.41-1	-2.75-1	1.52-1
7.960	9.35-1	6.63+0	3.59-1	5.14-1	1.22-1	1.48-1	1.53-1	5.14-2	1.70-1
8.000	1.62+0	6.26+0	3.59-1	3.35-1	1.26-1	2.23-1	1.60-1	-3.00-1	1.65-1
8.040	4.96-1	6.22+0	3.46-1	5.41-1	1.26-1	2.37-1	1.53-1	-3.47-2	1.73-1
8.080	1.03+0	6.53+0	3.55-1	3.63-1	1.16-1	3.82-2	1.42-1	3.25-1	1.66-1
8.120	1.39+0	6.14+0	3.54-1	4.77-1	1.32-1	3.74-1	1.63-1	-5.33-2	1.79-1
8.160	7.97-1	6.24+0	3.55-1	3.86-1	1.26-1	4.00-1	1.52-1	-6.61-2	1.71-1
8.200	1.10+0	5.81+0	3.40-1	5.02-1	1.33-1	2.42-1	1.65-1	-8.38-2	1.84-1
8.240	1.43+0	6.13+0	3.41-1	6.81-1	1.30-1	2.42-1	1.63-1	9.79-2	1.77-1
8.280	6.40-1	5.60+0	3.37-1	3.19-1	1.31-1	2.63-1	1.60-1	-1.06-2	1.78-1
8.320	9.40-1	5.62+0	3.36-1	4.77-1	1.36-1	3.08-1	1.71-1	4.19-2	1.85-1
8.360	1.21+0	6.28+0	3.58-1	2.23-1	1.21-1	9.52-2	1.49-1	1.18-2	1.65-1
8.400	2.04+0	5.91+0	3.45-1	3.84-1	1.28-1	3.62-1	1.55-1	9.85-2	1.75-1

En(MeV)	x^2	A_Q	EA_0	A_2	EA_2	A_4	EA_4	A_6	EA_6
8.440	7.02-1	5.37+0	3.38-1	2.87-1	1.40-1	3.75-1	1.75-1	6.18-2	1.86-1
8.480	1.40+0	4.59+0	2.87-1	5.60-1	1.35-1	-1.10-1	1.64-1	1.23-1	1.92-1
8.520	1.56+0	5.20+0	3.18-1	4.36-1	1.33-1	8.99-2	1.65-1	2.67-1	1.86-1
8.560	3.89-1	5.30+0	3.21-1	4.59-1	1.33-1	9.77-2	1.63-1	-1.28-2	1.87-1
8.600	1.19+0	4.87+0	3.09-1	5.70-1	1.46-1	3.71-1	1.76-1	-2.26-1	2.02-1
8.640	1.19+0	5.26+0	3.29-1	2.92-1	1.36-1	2.18-1	1.68-1	2.27-1	1.93-1
8.680	7.85-1	4.83+0	3.17-1	2.78-1	1.42-1	2.91-1	1.78-1	2.53-2	2.01-1
8.720	9.01-1	4.89+0	3.12-1	4.14-1	1.41-1	-5.55-3	1.79-1	-9.17-2	1.92-1
8.760	1.26+0	4.22+0	2.89-1	3.36-1	1.47-1	-5.52-2	1.87-1	2.61-1	2.11-1
8.800	7.71-1	4.72+0	3.18-1	1.43-1	1.45-1	1.17-1	1.82-1	2.78-1	1.98-1
8.840	6.50-1	4.48+0	3.10-1	2.98-1	1.56-1	4.95-1	1.94-1	6.15-3	2.11-1
8.880	1.02+0	5.32+0	3.42-1	2.44-2	1.37-1	1.48-1	1.70-1	-2.27-1	1.75-1
8.920	1.02+0	4.00+0	2.76-1	6.51-1	1.60-1	3.98-1	1.95-1	3.05-1	2.21-1
8.960	1.31+0	4.40+0	3.00-1	2.60-1	1.46-1	1.69-1	1.78-1	9.39-2	2.01-1
9.000	9.48-1	3.58+0	2.54-1	6.68-1	1.60-1	1.13-2	1.95-1	3.59-2	2.14-1
9.040	1.36+0	3.76+0	2.86-1	2.83-1	1.65-1	1.60-1	2.04-1	4.91-1	2.33-1
9.080	9.63-1	3.73+0	2.72-1	5.71-1	1.64-1	-1.26-2	2.07-1	2.45-1	2.29-1
9.120	5.37-1	4.02+0	2.80-1	4.63-1	1.55-1	1.20-1	1.92-1	9.39-2	2.17-1
9.160	7.71-1	4.11+0	2.81-1	4.13-1	1.45-1	-1.68-1	1.88-1	3.39-1	2.18-1
9.200	1.46+0	3.52+0	2.71-1	1.26-1	1.61-1	2.53-2	2.02-1	7.89-2	2.12-1
9.240	5.59-1	4.00+0	2.81-1	4.20-1	1.54-1	9.43-2	1.88-1	-2.88-1	2.09-1
9.280	1.26+0	3.56+0	2.74-1	2.59-1	1.68-1	6.19-2	2.16-1	3.67-1	2.35-1
9.320	1.52+0	3.16+0	2.56-1	3.42-1	1.74-1	-1.26-1	2.21-1	3.40-2	2.45-1
9.360	2.55+0	3.43+0	2.52-1	4.37-1	1.55-1	-2.63-1	1.87-1	-2.87-1	2.05-1
9.400	5.73-1	3.59+0	2.78-1	1.98-1	1.70-1	2.51-1	2.12-1	-1.67-1	2.27-1
9.440	5.72-1	3.51+0	2.64-1	2.94-1	1.60-1	-1.55-1	2.03-1	-2.51-1	2.23-1
9.480	8.04-1	3.14+0	2.54-1	2.46-1	1.74-1	-2.98-3	2.25-1	-4.49-2	2.34-1
9.520	9.70-1	2.84+0	2.41-1	3.39-1	1.87-1	5.43-1	2.25-1	1.45-1	2.55-1
9.560	1.43+0	3.53+0	2.83-1	1.24-1	1.71-1	3.12-2	2.17-1	-1.64-1	2.35-1
9.600	1.07+0	3.05+0	2.39-1	7.12-1	1.77-1	-3.28-1	2.32-1	3.51-1	2.65-1
9.640	1.27+0	2.63+0	2.32-1	3.94-1	1.99-1	5.28-1	2.43-1	3.48-2	2.73-1
9.680	9.20-1	3.14+0	2.49-1	2.98-1	1.67-1	-2.65-1	2.15-1	-2.52-1	2.39-1
9.720	8.15-1	3.31+0	2.75-1	3.08-2	1.83-1	2.39-1	2.24-1	-2.64-1	2.38-1
9.760	1.25+0	2.81+0	2.50-1	1.82-1	1.91-1	2.13-1	2.39-1	-1.97-1	2.56-1
9.800	2.71+0	2.31+0	2.15-1	4.43-1	2.08-1	2.88-1	2.50-1	5.47-2	2.83-1
9.840	1.25+0	2.87+0	2.40-1	2.27-1	1.74-1	-1.13-1	2.13-1	-2.84-2	2.39-1
9.880	5.96-1	2.43+0	2.22-1	3.13-1	1.98-1	6.77-2	2.45-1	6.80-2	2.66-1
9.920	6.70-1	3.03+0	2.51-1	1.89-1	1.76-1	8.58-2	2.21-1	6.57-2	2.38-1
9.960	3.92-1	3.14+0	2.61-1	4.13-2	1.76-1	6.17-2	2.19-1	-2.55-1	2.34-1
10.000	7.42-1	2.30+0	2.15-1	4.36-1	2.02-1	-1.31-1	2.60-1	2.11-1	2.87-1
10.040	1.32+0	2.39+0	2.15-1	2.42-1	1.84-1	-4.96-1	2.48-1	1.20-1	2.70-1
10.080	7.60-1	2.70+0	2.52-1	-1.66-1	2.01-1	5.39-1	2.37-1	-9.96-2	2.46-1
10.120	1.25+0	2.17+0	1.96-1	6.41-1	2.01-1	1.72-1	2.37-1	3.43-1	2.85-1
10.160	1.03+0	1.88+0	1.70-1	1.07+0	2.18-1	-2.62-1	2.79-1	5.46-1	3.39-1
10.200	1.24+0	2.12+0	2.10-1	7.74-3	2.01-1	-2.39-1	2.54-1	1.25-1	2.57-1
10.240	6.12-1	1.87+0	1.86-1	6.54-1	2.27-1	2.69-1	2.71-1	-1.65-2	3.18-1
10.280	7.82-1	2.01+0	2.09-1	1.08-1	2.24-1	3.03-1	2.83-1	-3.45-1	2.99-1
10.320	9.76-1	2.09+0	2.03-1	3.61-1	2.08-1	8.50-2	2.55-1	2.82-1	3.08-1
10.360	5.50-1	2.08+0	2.16-1	1.44-1	2.21-1	2.50-1	2.67-1	-4.26-2	2.93-1
10.400	3.71-1	2.40+0	2.35-1	-4.96-2	2.06-1	-1.33-1	2.58-1	2.26-1	2.73-1
10.440	1.65+0	2.11+0	2.11-1	2.07-1	2.07-1	-5.85-2	2.47-1	1.00-2	3.10-1
10.480	9.05-1	2.07+0	2.17-1	-5.15-2	2.26-1	2.25-1	2.84-1	1.24-1	2.90-1
10.520	1.43+0	2.06+0	2.07-1	1.78-1	2.14-1	2.09-1	2.67-1	6.03-2	3.07-1
10.560	1.26+0	2.03+0	1.85-1	8.43-1	2.12-1	-2.08-1	2.76-1	3.48-1	3.21-1
10.600	7.87-1	2.02+0	1.94-1	5.13-1	2.08-1	-9.96-2	2.51-1	-8.17-2	2.83-1
10.640	4.70-1	1.90+0	2.06-1	3.76-1	2.46-1	2.86-1	3.06-1	-2.88-1	3.24-1
10.680	1.48+0	1.73+0	1.91-1	1.09-1	2.30-1	-2.61-1	3.04-1	-5.04-1	3.30-1
10.720	1.61-1	1.92+0	2.10-1	1.58-1	2.42-1	2.18-1	2.97-1	-4.80-1	3.20-1
10.760	4.89-1	1.77+0	1.92-1	3.68-1	2.35-1	-2.05-1	3.06-1	-8.30-4	3.19-1
10.800	8.33-1	1.69+0	1.97-1	1.27-1	2.62-1	5.52-1	3.29-1	-2.70-1	3.27-1
10.840	8.78-1	1.94+0	2.05-1	1.75-1	2.32-1	4.01-1	2.98-1	-1.28-1	3.12-1
10.880	1.24+0	1.84+0	2.00-1	2.99-1	2.46-1	7.11-1	3.02-1	-4.29-3	3.15-1
10.920	6.38-1	1.89+0	2.02-1	6.36-2	2.25-1	1.02-1	2.78-1	-6.76-1	3.16-1
10.960	1.01+0	1.72+0	1.94-1	1.01-1	2.46-1	5.34-1	2.96-1	-1.08-1	3.35-1
11.000	1.42+0	1.60+0	1.84-1	-1.21-2	2.38-1	-1.82-2	2.93-1	3.00-1	3.48-1
11.040	8.85-1	1.64+0	1.94-1	3.92-2	2.50-1	4.23-3	3.19-1	-4.28-1	3.42-1

En(MeV)	χ^2	A_q	EA_0	A_2	EA_2	A_4	EA_4	A_6	EA_6
11.080	8.90-1	1.81+0	2.03-1	2.48-1	2.47-1	-2.13-1	3.27-1	2.82-1	3.31-1
11.120	4.67-1	1.95+0	2.36-1	1.24-1	2.62-1	2.73-1	3.24-1	-4.13-1	3.28-1
11.160	1.68+0	1.67+0	1.73-1	5.05-1	2.16-1	-7.64-2	2.55-1	5.29-1	3.36-1
11.200	8.23-1	1.39+0	1.61-1	5.49-1	2.55-1	-1.27-1	3.21-1	-1.34-2	3.76-1
11.240	1.01+0	1.63+0	1.89-1	4.71-2	2.51-1	3.35-1	3.09-1	7.77-2	3.45-1
11.280	8.36-1	1.40+0	1.58-1	3.82-1	2.22-1	-4.80-1	3.05-1	8.77-1	3.60-1
11.320	1.03+0	1.43+0	1.70-1	5.71-1	2.80-1	3.95-1	3.47-1	7.99-2	3.88-1
11.360	9.14-1	1.72+0	1.97-1	1.02-1	2.43-1	-9.41-2	3.01-1	3.06-1	3.32-1
11.400	8.79-1	1.51+0	1.73-1	4.45-1	2.51-1	-3.58-3	3.20-1	-1.81-1	3.46-1
11.440	9.23-1	1.36+0	1.79-1	-1.69-1	2.86-1	-2.24-1	3.65-1	-2.14-1	3.91-1
11.480	1.75+0	1.46+0	2.10-1	-1.49-1	3.14-1	3.13-1	3.68-1	-1.81-1	4.00-1
11.520	1.03+0	1.19+0	1.58-1	1.64-1	2.81-1	-4.53-2	3.48-1	-7.82-2	4.07-1
11.560	1.08+0	1.35+0	1.72-1	2.26-1	2.83-1	5.92-1	3.51-1	-3.15-1	3.77-1
11.600	7.50-1	1.62+0	1.87-1	6.35-2	2.44-1	-2.41-2	3.05-1	2.76-1	3.38-1
11.640	6.04-1	1.73+0	1.99-1	-1.07-1	2.46-1	2.61-1	3.08-1	-2.06-1	3.03-1
11.680	1.03+0	1.24+0	1.62-1	4.25-1	3.00-1	-2.21-1	4.10-1	-5.31-2	4.01-1
11.720	2.15+0	1.36+0	2.09-1	2.73-1	3.49-1	5.33-1	4.22-1	3.35-1	4.12-1
11.760	5.25-1	1.05+0	1.44-1	6.65-1	3.18-1	3.08-1	3.82-1	-7.58-2	4.30-1
11.800	1.18+0	1.02+0	1.25-1	1.12+0	2.89-1	-8.27-1	4.05-1	3.26-1	4.61-1
11.840	6.41-1	1.64+0	1.87-1	4.38-2	2.38-1	-1.20-1	3.05-1	-1.89-1	3.21-1
11.880	5.06-1	1.34+0	1.73-1	6.21-2	2.80-1	2.32-1	3.48-1	6.10-2	3.62-1
11.920	6.33-1	1.40+0	1.73-1	2.52-1	2.68-1	9.69-2	3.32-1	4.11-1	3.80-1
11.960	5.14-1	1.43+0	1.94-1	-5.42-1	3.01-1	5.09-1	3.53-1	-1.79-1	3.31-1
12.000	9.45-1	9.85-1	1.60-1	-8.18-2	3.67-1	5.42-1	4.30-1	-6.58-1	4.41-1
12.040	1.24+0	1.09+0	1.52-1	1.67-1	3.05-1	5.85-2	3.85-1	4.80-1	4.45-1
12.080	5.37-1	1.19+0	1.52-1	4.93-1	2.74-1	-1.70-1	3.49-1	2.90-1	4.00-1
12.120	5.12-1	1.36+0	1.71-1	8.49-2	2.66-1	-4.41-3	3.32-1	-8.61-3	3.53-1
12.160	5.04-1	1.44+0	1.82-1	1.29-2	2.75-1	4.97-2	3.48-1	1.61-1	3.54-1
12.200	6.53-1	1.04+0	1.33-1	6.67-1	2.69-1	-7.82-1	3.69-1	2.23-1	4.05-1
12.240	9.76-1	1.20+0	1.65-1	6.09-2	3.03-1	-5.82-2	4.03-1	1.37-1	3.83-1
12.280	3.68-1	1.36+0	1.78-1	-1.30-1	2.79-1	2.37-1	3.45-1	-4.38-1	3.60-1
12.320	4.89-1	1.16+0	1.55-1	-6.59-2	2.49-1	-6.13-1	3.41-1	9.08-1	4.00-1
12.360	1.15+0	1.05+0	1.63-1	-1.49-1	3.37-1	1.36-1	4.29-1	4.31-1	4.19-1
12.400	5.19-1	1.36+0	1.72-1	2.14-1	2.73-1	-8.84-2	3.40-1	9.71-2	3.98-1
12.440	1.12+0	1.25+0	1.77-1	-3.80-1	3.09-1	3.55-1	3.59-1	-1.85-1	3.54-1
12.480	9.41-1	1.18+0	1.67-1	-1.74-1	3.04-1	1.13-1	3.88-1	-3.10-1	4.05-1
12.520	5.96-1	9.97-1	1.33-1	7.06-1	2.98-1	-2.16-1	3.78-1	-4.27-2	4.23-1
12.560	7.34-1	1.05+0	1.47-1	2.60-1	3.00-1	8.70-2	3.75-1	-1.21-1	4.44-1
12.600	7.53-1	1.18+0	1.58-1	2.87-1	2.90-1	-8.89-2	3.72-1	-3.64-1	4.28-1
12.640	3.17-1	1.23+0	1.72-1	-2.13-1	3.08-1	3.03-1	3.73-1	-6.92-1	4.05-1
12.680	8.71-1	1.26+0	1.63-1	1.31-1	2.74-1	-3.58-1	3.68-1	-5.55-1	3.79-1
12.720	1.03+0	1.07+0	1.43-1	3.71-1	2.80-1	-4.20-1	3.87-1	4.85-1	4.18-1
12.760	9.86-1	1.00+0	1.43-1	2.99-1	3.00-1	-1.13-1	3.63-1	1.78-1	4.34-1
12.800	4.26-1	1.18+0	1.73-1	-2.39-1	3.17-1	6.65-1	3.70-1	-2.35-1	3.74-1
12.840	7.89-1	1.01+0	1.34-1	6.14-1	2.80-1	-7.14-1	3.81-1	-4.78-1	4.29-1
12.880	6.04-1	1.15+0	1.52-1	5.88-1	3.08-1	2.17-1	3.77-1	-1.51-1	4.44-1
12.920	1.04+0	1.19+0	1.94-1	-3.16-1	3.37-1	3.91-1	3.81-1	-2.01-1	4.04-1
12.960	8.55-1	8.22-1	1.27-1	1.98-1	3.09-1	-4.17-1	4.02-1	-4.42-2	4.64-1
13.000	9.90-1	9.42-1	1.53-1	-1.62-3	3.64-1	5.04-1	4.39-1	-4.66-1	4.60-1
13.040	6.12-1	1.10+0	1.72-1	-3.30-1	3.52-1	2.37-1	4.16-1	3.39-1	4.24-1
13.080	8.54-1	1.32+0	2.14-1	-1.90-1	3.68-1	2.26-1	4.27-1	3.10-1	4.20-1
13.120	1.36+0	1.02+0	1.66-1	-2.05-1	3.71-1	6.68-1	4.29-1	-2.89-1	4.90-1
13.160	1.21+0	9.61-1	1.47-1	2.63-1	3.50-1	8.59-2	4.71-1	2.42-1	4.78-1
13.200	1.14+0	1.00+0	1.61-1	-4.09-1	3.44-1	6.08-1	4.23-1	3.38-1	4.43-1
13.240	7.56-1	7.89-1	1.52-1	2.42-1	4.36-1	6.32-2	5.37-1	6.44-1	5.32-1
13.280	1.27+0	1.12+0	1.90-1	-1.79-1	3.58-1	1.19-1	4.23-1	-1.71-1	4.39-1
13.320	4.37-1	1.01+0	1.55-1	-1.80-1	3.30-1	4.49-1	4.02-1	-3.09-1	4.26-1
13.360	1.08+0	1.04+0	1.57-1	-1.15-1	3.28-1	3.62-1	4.13-1	5.79-1	4.12-1
13.400	6.85-1	6.60-1	1.13-1	4.59-1	3.77-1	4.72-1	4.61-1	4.08-1	5.32-1
13.440	8.89-1	8.60-1	1.25-1	6.02-1	3.10-1	-5.03-1	4.19-1	6.66-1	5.09-1
13.480	1.09+0	1.14+0	1.71-1	-4.08-1	3.23-1	1.12-1	3.89-1	-3.13-1	3.91-1
13.520	5.66-1	9.16-1	1.62-1	2.21-1	3.92-1	3.19-1	5.07-1	-2.31-1	5.29-1
13.560	7.46-1	9.81-1	1.58-1	-4.34-1	3.41-1	1.59-1	4.01-1	-9.06-2	4.13-1
13.600	9.74-1	6.07-1	1.43-1	5.85-1	5.71-1	-2.57-2	6.65-1	-8.25-2	6.85-1
13.640	1.14+0	1.10+0	1.59-1	2.11-1	3.23-1	4.40-1	3.88-1	-3.63-1	4.62-1
13.680	6.32-1	7.63-1	1.19-1	6.61-1	3.59-1	8.88-2	4.40-1	-2.95-1	4.88-1

En(MeV)	χ^2	A_q	EA_0	A_2	EA_2	$A4$	$EA4$	$A6$	$EA6$
13.720	6.30-1	1.06+0	1.54-1	3.96-1	3.52-1	7.12-1	4.40-1	2.01-1	4.64-1
13.760	1.77+0	5.22-1	1.00-1	6.15-1	4.35-1	-4.17-1	5.87-1	-2.92-1	6.49-1
13.800	7.44-1	1.05+0	1.63-1	-1.51-1	3.38-1	-2.44-1	4.29-1	3.19-1	4.28-1
13.840	9.84-1	9.72-1	1.38-1	2.57-1	2.86-1	-7.60-1	4.03-1	5.75-1	4.99-1
13.880	7.31-1	8.41-1	1.34-1	8.75-2	3.44-1	3.08-1	4.22-1	1.31-1	5.26-1
13.920	6.38-1	6.34-1	1.24-1	8.30-1	4.55-1	-9.01-1	5.78-1	-7.01-1	5.68-1
13.960	9.03-1	9.49-1	1.32-1	2.52-1	2.73-1	-7.90-1	3.98-1	9.10-1	4.79-1
14.000	9.51-1	6.98-1	1.10-1	8.72-1	3.69-1	-2.24-1	4.76-1	3.04-1	5.96-1
14.040	4.77-1	1.07+0	1.56-1	-6.64-2	3.10-1	1.07-1	3.91-1	2.28-2	4.17-1
14.080	4.84-1	9.14-1	1.31-1	6.03-1	3.22-1	2.43-1	3.77-1	-6.97-2	4.41-1
14.120	7.13-1	8.86-1	1.35-1	1.92-1	3.21-1	3.27-1	4.00-1	6.87-1	4.32-1
14.160	3.28-1	1.01+0	1.72-1	1.80-1	3.85-1	-1.89-1	4.75-1	5.09-1	5.13-1
14.200	6.00-1	6.78-1	1.20-1	4.18-1	3.94-1	4.86-1	4.91-1	7.09-1	5.49-1
14.240	5.87-1	9.35-1	1.53-1	-4.92-1	3.59-1	3.83-1	4.40-1	-3.72-1	4.61-1
14.280	5.27-1	9.68-1	1.38-1	4.73-1	3.02-1	-3.17-1	4.08-1	5.29-1	4.85-1
14.320	1.03+0	9.81-1	1.70-1	-7.40-2	3.40-1	-5.44-1	4.44-1	-1.26-1	4.72-1
14.360	1.65+0	6.50-1	1.38-1	3.12-1	4.68-1	2.50-1	5.29-1	-1.24+0	6.63-1
14.400	1.39+0	8.96-1	1.51-1	-6.87-2	3.72-1	3.27-1	4.43-1	-5.57-2	5.08-1
14.440	8.73-1	7.91-1	1.73-1	-1.57-1	5.04-1	4.34-1	6.01-1	-2.06-1	5.78-1
14.480	6.59-1	7.12-1	1.17-1	8.75-1	3.65-1	-1.45+0	5.67-1	3.45-1	5.85-1
14.520	2.22+0	7.38-1	1.60-1	-6.94-2	4.75-1	1.93-1	6.07-1	5.11-1	6.65-1
14.560	5.06-1	1.10+0	1.64-1	-1.13-1	3.19-1	5.24-4	3.94-1	-6.37-1	4.03-1
14.600	9.07-1	8.41-1	1.37-1	3.33-3	3.51-1	3.54-1	4.30-1	-4.61-1	4.61-1
14.640	9.28-1	1.01+0	1.49-1	6.39-2	3.17-1	-1.83-3	4.04-1	4.15-1	4.48-1
14.680	6.53-1	9.18-1	1.32-1	6.47-1	3.39-1	5.38-1	4.09-1	3.60-1	5.05-1
14.720	7.06-1	8.72-1	1.63-1	4.09-1	4.26-1	-3.58-1	5.20-1	7.92-1	5.73-1
14.760	6.09-1	8.11-1	1.27-1	5.62-1	3.54-1	-1.27-1	4.49-1	2.41-1	5.36-1
14.800	3.76-1	7.71-1	1.37-1	-8.46-4	3.92-1	4.26-1	4.85-1	5.62-1	5.18-1
14.840	5.55-1	8.63-1	1.35-1	5.98-1	3.70-1	4.90-1	4.63-1	1.19+0	5.65-1
14.880	1.54+0	8.50-1	1.32-1	1.98-1	3.18-1	-2.44-1	3.94-1	-9.23-2	4.72-1
14.920	1.32+0	6.62-1	1.23-1	2.69-1	4.10-1	3.25-1	5.08-1	2.63-1	5.23-1
14.960	1.37+0	6.33-1	1.21-1	2.40-1	4.25-1	8.29-1	4.84-1	-5.43-1	5.78-1
15.000	7.28-1	9.46-1	1.41-1	6.33-1	3.71-1	6.89-1	4.55-1	-1.69-1	4.75-1
15.040	6.89-1	7.36-1	1.23-1	3.61-1	3.64-1	-1.25-1	4.55-1	3.18-1	5.46-1
15.080	5.92-1	7.83-1	1.39-1	-3.93-1	3.91-1	-1.30-1	4.85-1	-2.54-1	5.09-1
15.120	5.12-1	8.72-1	1.46-1	-3.83-1	3.64-1	3.44-1	4.14-1	-4.76-1	4.71-1
15.160	9.49-1	7.48-1	1.27-1	6.86-2	3.46-1	-4.37-1	4.35-1	-2.36-1	4.79-1
15.200	1.00+0	6.96-1	1.57-1	1.20+0	6.09-1	-8.53-1	7.53-1	4.03-1	6.93-1
15.240	4.84-1	7.55-1	1.24-1	2.62-1	3.49-1	1.35-1	4.52-1	4.73-1	5.31-1
15.280	5.15-1	1.07+0	1.64-1	-3.56-1	3.36-1	4.86-1	4.03-1	1.08-1	3.96-1
15.320	7.94-1	5.97-1	2.45-1	1.69+0	1.19+0	-1.46+0	1.32+0	6.96-1	1.05+0
15.360	7.85-1	7.37-1	1.25-1	5.07-1	3.87-1	6.02-1	4.58-1	4.07-1	5.58-1
15.400	5.93-1	7.97-1	1.45-1	-1.75-1	4.09-1	4.60-1	4.95-1	-7.83-1	5.24-1
15.440	1.13+0	8.01-1	1.35-1	2.29-1	3.68-1	-2.68-2	4.54-1	6.04-1	5.75-1
15.480	6.83-1	6.69-1	1.35-1	3.09-1	4.56-1	4.73-2	5.55-1	6.38-1	6.21-1
15.520	8.99-1	6.81-1	1.28-1	2.20-1	4.26-1	-7.32-2	5.44-1	1.59-1	5.45-1
15.560	6.81-1	6.60-1	1.13-1	5.38-1	3.78-1	3.19-2	4.60-1	1.03-1	5.34-1
15.600	1.20+0	7.57-1	1.23-1	4.53-1	3.53-1	1.71-1	4.32-1	7.61-1	5.60-1
15.640	5.95-1	6.80-1	1.24-1	2.49-2	3.83-1	2.57-2	4.70-1	2.54-1	5.00-1
15.680	8.43-1	7.16-1	1.20-1	5.43-1	3.87-1	6.62-1	4.60-1	-5.36-1	5.89-1
15.720	1.34+0	6.99-1	1.31-1	-2.12-1	4.00-1	-7.13-3	4.95-1	-6.50-2	5.51-1
15.760	4.64-1	6.33-1	1.18-1	9.45-2	3.79-1	-4.35-1	4.99-1	3.01-2	5.24-1
15.800	6.44-1	8.20-1	1.30-1	2.77-1	3.29-1	-3.37-1	4.18-1	-9.40-2	4.75-1
15.840	6.72-1	7.45-1	1.30-1	2.18-1	3.92-1	-1.56-1	5.00-1	8.81-2	5.74-1
15.880	6.59-1	6.54-1	1.21-1	1.12-1	4.07-1	-1.59-1	5.46-1	8.22-1	5.67-1
15.920	9.37-1	5.60-1	1.10-1	4.42-1	4.39-1	-2.04-1	5.98-1	-2.84-1	6.24-1
15.960	4.66-1	9.85-1	1.56-1	1.10-2	3.53-1	2.50-1	4.32-1	-2.74-1	4.58-1
16.000	1.91-1	7.32-1	1.18-1	7.11-1	3.71-1	-8.00-2	4.64-1	-1.95-1	5.34-1
16.040	1.09+0	9.10-1	1.50-1	6.49-2	3.69-1	3.29-1	4.74-1	6.21-1	5.34-1
16.080	1.09+0	5.57-1	1.19-1	-5.88-2	4.73-1	5.40-1	5.86-1	3.75-1	5.83-1
16.120	7.52-1	8.17-1	1.41-1	-2.52-1	3.79-1	5.71-1	4.46-1	3.16-2	4.98-1
16.160	7.39-1	7.34-1	1.25-1	6.47-1	4.21-1	3.76-1	5.15-1	1.20+0	6.37-1
16.200	4.47-1	8.23-1	1.25-1	4.95-1	3.15-1	-7.95-1	4.51-1	8.25-2	5.38-1
16.240	6.41-1	6.14-1	1.04-1	6.53-1	3.61-1	-9.09-1	5.23-1	2.72-1	6.40-1
16.280	4.70-1	8.11-1	1.66-1	1.43-1	4.56-1	7.39-1	5.59-1	-2.90-1	5.57-1
16.320	8.80-1	6.67-1	1.34-1	-5.16-1	4.34-1	1.17+0	4.82-1	-1.21+0	5.69-1

En(MeV)	χ^2	A_Q	EA_0	A_2	EA_2	$A4$	$EA4$	$A6$	$EA6$
16.360	6.88-1	9.47-1	1.51-1	-2.02-1	3.51-1	5.57-1	4.06-1	-6.61-1	4.42-1
16.400	2.82-1	6.96-1	1.48-1	-1.92-1	4.68-1	4.42-1	5.55-1	-1.67-1	5.76-1
16.440	5.27-1	8.17-1	1.38-1	7.09-2	3.63-1	-1.31-1	4.61-1	-4.41-1	5.16-1
16.480	5.91-1	5.61-1	1.15-1	1.48-1	4.51-1	2.95-1	5.63-1	4.86-1	5.67-1
16.520	6.36-1	7.50-1	1.44-1	3.12-1	4.17-1	-1.38-1	5.17-1	9.79-2	5.92-1
16.560	6.79-1	6.24-1	1.32-1	6.47-1	4.77-1	-2.65-1	5.74-1	4.85-1	6.04-1
16.600	1.03+0	4.99-1	1.04-1	3.10-1	4.69-1	6.56-1	5.68-1	3.33-1	7.37-1
16.640	4.06-1	6.61-1	1.16-1	3.72-1	3.85-1	-4.19-4	4.84-1	-2.14-1	5.15-1
16.680	3.76-1	6.18-1	1.12-1	6.59-1	4.19-1	2.14-1	4.90-1	-9.29-1	5.50-1
16.720	8.40-1	6.44-1	1.19-1	6.35-1	4.43-1	2.79-1	5.45-1	9.16-2	5.73-1
16.760	8.59-1	6.43-1	1.48-1	3.21-1	5.43-1	4.23-1	6.71-1	9.73-1	7.06-1
16.800	5.98-1	9.37-1	1.49-1	-2.94-1	3.39-1	-1.55-1	4.34-1	1.29-1	4.36-1
16.840	5.57-1	9.14-1	1.49-1	-1.43-1	3.45-1	-3.92-1	4.44-1	3.36-1	4.84-1
16.880	7.79-1	7.04-1	1.67-1	4.32-2	5.37-1	-1.12-1	6.24-1	6.38-1	5.92-1
16.920	8.52-1	5.85-1	1.24-1	8.99-1	5.09-1	-1.81-1	6.19-1	4.08-1	6.38-1
16.960	7.22-1	4.51-1	1.03-1	5.07-1	5.42-1	8.36-1	6.80-1	-5.42-1	7.53-1
17.000	7.43-1	6.93-1	1.59-1	-5.54-1	5.11-1	6.93-1	5.35-1	-1.88-1	5.69-1
17.040	1.70+0	5.29-1	1.21-1	-9.35-2	5.37-1	1.49+0	6.40-1	-3.83-1	7.34-1
17.080	7.35-1	4.73-1	1.06-1	8.50-1	5.95-1	4.81-1	7.74-1	1.01-1	7.80-1
17.120	5.84-1	7.86-1	1.46-1	1.78-1	3.67-1	-5.20-1	4.74-1	6.18-1	5.72-1
17.160	6.65-1	4.79-1	9.83-2	7.27-1	4.95-1	3.06-1	6.07-1	7.17-1	7.21-1
17.200	3.55-1	7.26-1	1.64-1	-2.66-1	5.06-1	3.10-1	6.06-1	-6.97-1	6.08-1
17.240	1.12+0	6.61-1	1.40-1	1.80-1	4.72-1	2.18-1	5.92-1	-5.08-1	5.91-1
17.280	5.35-1	5.96-1	1.34-1	4.05-1	5.23-1	-6.66-1	6.83-1	1.03+0	7.22-1
17.320	4.33-1	6.98-1	1.32-1	-1.16-1	4.14-1	6.24-2	5.11-1	-4.98-1	5.24-1
17.360	5.12-1	6.96-1	1.33-1	-4.29-1	4.05-1	8.29-2	4.74-1	3.88-1	5.08-1
17.400	1.11+0	5.34-1	1.10-1	-1.68-2	4.24-1	-1.49-1	5.50-1	9.28-1	5.66-1
17.440	3.57-1	7.04-1	1.34-1	-4.72-1	4.25-1	8.57-1	4.79-1	3.14-1	5.47-1
17.480	6.25-1	6.51-1	1.55-1	2.59-1	5.62-1	-2.84-1	6.83-1	-7.46-2	6.87-1
17.520	3.84-1	3.04-1	1.98-1	2.14+0	2.09+0	-1.81+0	2.19+0	2.11+0	2.18+0
17.560	2.17-1	4.54-1	8.90-2	9.52-1	4.96-1	2.16-1	5.87-1	-6.79-1	7.30-1
17.600	4.66-1	5.95-1	1.48-1	-1.81-1	5.56-1	-2.46-1	6.82-1	6.01-1	7.22-1
17.640	4.51-1	5.52-1	1.34-1	6.21-1	5.85-1	-6.79-1	7.77-1	8.69-2	7.41-1
17.680	3.19-1	7.37-1	1.57-1	1.47-3	4.72-1	2.43-1	5.52-1	1.95-1	5.71-1
17.720	6.17-1	7.58-1	1.31-1	-7.68-3	3.60-1	-2.16-1	4.59-1	3.95-1	5.10-1
17.760	3.50-1	6.01-1	1.12-1	1.37-1	3.87-1	-2.44-1	5.13-1	-2.72-1	5.55-1
17.800	1.23+0	3.63-1	9.84-2	4.56-1	6.61-1	-1.76-1	7.78-1	-1.08+0	9.73-1
17.840	9.06-1	5.24-1	1.10-1	1.10-1	4.68-1	3.89-1	5.63-1	4.57-1	6.99-1
17.880	5.42-1	5.37-1	1.08-1	5.63-1	4.69-1	9.02-1	5.58-1	1.48-1	5.96-1
17.920	6.11-1	5.53-1	1.03-1	3.79-1	3.76-1	-9.03-1	5.67-1	5.73-1	6.38-1
17.960	7.39-1	5.33-1	1.06-1	3.99-1	4.37-1	-1.50-1	5.59-1	2.86-1	6.80-1
18.000	4.43-1	5.33-1	1.00-1	7.44-1	4.25-1	-1.61-1	5.25-1	-1.70-1	6.79-1
18.040	7.54-1	3.35-1	9.80-2	4.88-1	6.70-1	-1.73-1	8.01-1	1.76+0	1.06+0
18.080	6.51-1	4.83-1	1.11-1	-5.13-1	5.32-1	3.00-1	6.08-1	3.19-1	7.14-1
18.120	1.52+0	4.07-1	1.22-1	3.17-2	6.87-1	1.09+0	8.05-1	-8.91-1	1.00+0
18.160	1.00+0	4.50-1	1.02-1	5.23-1	5.65-1	9.40-2	7.59-1	-7.73-1	7.88-1
18.200	1.24+0	3.25-1	1.18-1	7.94-1	9.42-1	-3.74-1	1.17+0	1.86-1	1.15+0
18.240	8.57-1	5.16-1	1.37-1	-3.46-1	6.15-1	3.72-1	7.45-1	-5.22-1	7.27-1
18.280	7.18-1	4.68-1	1.09-1	1.31-1	5.75-1	1.30+0	6.69-1	1.07-1	8.24-1
18.320	5.24-1	4.31-1	9.23-2	5.72-1	4.83-1	1.93-1	6.14-1	5.73-1	6.99-1
18.360	5.05-1	5.70-1	1.51-1	-1.64-1	5.85-1	2.88-1	6.53-1	-6.53-1	6.54-1
18.400	3.72-1	5.16-1	1.50-1	6.76-2	6.68-1	4.00-1	7.70-1	1.07-1	6.97-1
18.440	1.49+0	4.46-1	1.05-1	6.93-1	5.60-1	-2.56-2	6.27-1	1.05-2	1.01+0
18.480	4.74-1	4.28-1	1.92-1	-6.67-2	1.01+0	8.27-1	1.11+0	-1.28+0	1.11+0
18.520	1.16+0	5.37-1	1.16-1	-1.42-1	4.97-1	1.10+0	5.66-1	-3.38-1	7.72-1
18.560	7.58-1	6.06-1	1.21-1	-1.78-1	4.26-1	3.75-1	5.05-1	3.92-1	5.45-1
18.600	6.81-1	4.25-1	9.63-2	2.99-1	5.07-1	-3.49-2	6.57-1	-1.19-1	7.90-1
18.640	1.13+0	6.63-1	1.85-1	-6.71-1	6.53-1	1.03+0	7.06-1	4.72-1	5.65-1
18.680	4.27-1	4.70-1	1.04-1	-3.53-3	4.86-1	-4.48-1	6.50-1	1.03+0	7.28-1
18.720	6.89-1	3.91-1	1.16-1	6.33-1	7.16-1	-3.26-1	8.65-1	1.89+0	1.01+0
18.760	6.64-1	5.23-1	2.27-1	1.98-1	1.02+0	2.79-3	1.10+0	3.37-1	8.84-1
18.800	5.16-1	3.65-1	9.95-2	7.78-1	6.64-1	1.81-2	8.13-1	2.16+0	1.12+0
18.840	9.25-1	4.17-1	1.02-1	1.07-1	5.81-1	9.07-1	6.80-1	9.73-1	8.48-1
18.880	1.54+0	3.95-1	9.89-2	6.09-1	7.11-1	6.18-1	8.21-1	6.18-2	1.07+0
18.920	5.74-1	6.35-1	1.53-1	-3.36-1	5.40-1	-2.25-2	6.27-1	6.75-1	6.04-1
18.960	3.01-1	5.27-1	1.13-1	3.57-1	5.15-1	6.40-1	6.23-1	1.99-1	7.30-1

En(MeV)	χ^2	A_q	EA_0	A_2	EA_2	$A4$	$EA4$	$A6$	$EA6$
19.000	6.81-1	4.59-1	9.81-2	6.72-1	4.89-1	-4.35-1	6.63-1	-3.06-3	7.83-1
19.040	5.34-1	5.37-1	1.13-1	-3.53-2	4.57-1	3.75-1	5.38-1	-5.89-1	6.45-1
19.080	7.76-1	3.46-1	9.61-2	7.57-1	6.68-1	5.04-1	7.89-1	-1.63-1	8.93-1
19.120	7.51-1	4.76-1	1.05-1	3.05-1	5.26-1	1.00+0	6.92-1	-7.05-1	7.36-1
19.160	7.25-1	3.39-1	1.05-1	8.62-1	7.74-1	-3.35-1	9.14-1	-7.70-1	9.43-1
19.200	6.68-1	4.52-1	1.45-1	3.86-1	7.06-1	-3.24-1	8.09-1	7.24-1	8.00-1
19.240	5.17-1	3.91-1	9.92-2	1.49-1	6.07-1	8.21-1	7.42-1	-7.30-1	7.57-1
19.280	6.79-1	3.57-1	8.90-2	3.53-1	5.88-1	3.57-1	7.24-1	1.10-1	8.56-1
19.320	7.72-1	6.22-1	1.59-1	-2.74-1	5.87-1	1.08+0	7.08-1	-3.80-1	6.06-1
19.360	5.35-1	5.38-1	1.39-1	2.78-1	7.02-1	1.77+0	7.74-1	5.11-1	1.05+0
19.400	5.62-1	4.01-1	1.36-1	1.45-1	8.34-1	1.34+0	9.63-1	4.24-1	9.13-1
19.440	1.19+0	2.95-1	7.84-2	7.37-1	6.52-1	2.25-1	8.73-1	6.46-1	1.03+0
19.480	1.57+0	4.87-1	1.10-1	-7.42-2	4.98-1	9.46-1	5.61-1	-9.10-1	7.67-1
19.520	5.69-1	4.00-1	9.26-2	4.64-2	4.69-1	-7.13-1	6.62-1	1.03+0	8.19-1
19.560	8.00-1	2.45-1	1.95-1	1.48+0	2.23+0	-1.58+0	2.42+0	5.69-1	1.90+0
19.600	9.90-1	3.32-1	1.14-1	1.40-1	8.04-1	6.24-1	9.70-1	6.20-1	9.63-1
19.640	6.24-1	4.29-1	1.02-1	8.77-2	5.25-1	-3.84-1	6.95-1	8.62-1	7.60-1
19.680	9.67-1	8.02-1	2.38-1	-9.45-1	6.91-1	1.46+0	7.37-1	-7.19-1	5.53-1
19.720	3.41-1	4.22-1	9.19-2	4.19-1	4.66-1	-4.20-1	6.34-1	-7.05-2	7.28-1
19.760	7.62-1	3.43-1	1.39-1	8.87-1	9.85-1	8.06-1	1.02+0	-5.90-1	8.99-1
19.800	1.06+0	3.28-1	1.09-1	8.76-1	7.84-1	2.05-2	9.04-1	1.83+0	1.11+0
19.840	4.30-1	3.13-1	8.58-2	4.36-1	6.46-1	1.83-1	8.20-1	7.30-2	8.77-1
19.880	5.05-1	4.26-1	1.18-1	6.21-1	6.96-1	-4.19-1	8.26-1	8.87-1	9.48-1
19.920	8.85-1	4.26-1	1.02-1	7.21-1	5.70-1	6.35-1	6.78-1	2.63-1	7.99-1
19.960	8.13-1	3.77-1	1.21-1	8.25-2	7.19-1	-9.76-2	8.15-1	-7.67-2	7.88-1
20.000	2.87-1	4.10-1	1.04-1	3.32-1	5.63-1	-1.33+0	8.18-1	7.06-1	8.87-1
20.040	5.07-1	4.51-1	1.01-1	2.73-2	4.91-1	7.07-2	6.11-1	-4.80-1	6.99-1
20.080	9.83-1	7.04-1	2.97-1	-8.47-1	9.95-1	1.24+0	1.09+0	-4.88-1	7.32-1
20.120	2.80-1	5.34-1	1.16-1	-3.62-1	4.75-1	4.76-3	5.58-1	2.21-1	6.44-1
20.160	1.07+0	2.67-1	1.00-1	1.20+0	1.07+0	-7.18-1	1.35+0	1.26+0	1.29+0
20.200	4.31-1	5.27-1	1.10-1	2.89-1	4.80-1	-6.30-2	5.79-1	-8.73-1	6.43-1
20.240	6.52-1	2.62-1	9.93-2	9.48-1	9.98-1	-7.47-1	1.18+0	6.34-1	1.25+0
20.280	6.48-1	4.77-1	1.10-1	-3.69-1	5.24-1	1.22+0	6.56-1	-3.61-1	6.74-1
20.320	3.23-1	5.40-1	1.04-1	5.47-1	4.27-1	-4.96-1	5.67-1	-2.29-1	6.46-1
20.360	3.98-1	4.17-1	1.17-1	2.02-1	6.47-1	-1.14-1	7.88-1	-2.88-2	8.47-1
20.400	1.35+0	3.57-1	9.99-2	1.92-1	6.67-1	1.32-1	7.58-1	1.30-1	1.03+0
20.440	4.67-1	2.43-1	1.99-1	2.97+0	3.23+0	-4.24+0	4.45+0	2.74+0	3.38+0
20.480	3.13-1	4.12-1	1.01-1	7.87-1	5.84-1	-5.05-1	7.52-1	6.90-1	8.42-1
20.520	4.90-1	3.80-1	9.31-2	6.83-1	6.16-1	2.00-1	7.77-1	-6.01-2	8.12-1
20.560	5.87-1	3.59-1	1.15-1	2.66-1	7.42-1	-4.51-1	8.73-1	2.46-1	9.06-1
20.600	9.83-1	3.60-1	1.88-1	-2.18-1	1.21+0	1.04+0	1.23+0	-4.53-1	1.24+0
20.640	4.35-1	5.29-1	1.32-1	3.41-1	5.40-1	-5.90-1	7.25-1	1.50-1	6.97-1
20.680	1.02+0	2.46-1	1.52-1	1.41+0	1.77+0	-8.56-1	1.68+0	-1.43-1	1.97+0
20.720	6.38-1	4.36-1	1.05-1	-2.69-1	5.27-1	-1.02-1	6.40-1	3.08-1	7.65-1
20.760	9.50-1	5.56-1	2.47-1	-5.27-1	1.02+0	5.90-1	9.96-1	3.12-1	8.36-1
20.800	6.91-1	3.32-1	9.27-2	1.74-1	6.07-1	-2.93-1	8.59-1	4.77-1	1.13+0
20.840	3.81-1	3.22-1	2.03-1	1.40+0	1.86+0	-6.29-1	1.66+0	7.66-1	1.85+0
20.880	3.42-1	3.05-1	8.81-2	-1.83-1	6.99-1	7.54-1	9.59-1	-5.87-1	9.31-1
20.920	8.09-1	4.55-1	1.02-1	2.69-1	5.19-1	8.96-1	6.25-1	-7.64-2	7.20-1
20.960	7.79-1	4.48-1	1.13-1	-6.81-1	5.68-1	1.14+0	6.10-1	-1.99-2	6.20-1
21.000	5.43-1	3.40-1	2.00-1	1.41+0	1.64+0	-1.46+0	1.88+0	5.72-1	1.50+0
21.040	3.70-1	2.75-1	8.74-2	1.27+0	8.93-1	1.59-1	9.90-1	8.75-1	1.21+0
21.080	8.53-1	4.74-1	2.22-1	-5.75-1	1.14+0	1.06+0	1.21+0	-7.66-1	9.70-1
21.120	6.46-1	2.98-1	1.03-1	2.24-1	8.56-1	2.02-1	9.79-1	-5.04-1	1.21+0
21.160	4.84-1	2.53-1	8.97-2	1.12-2	7.98-1	5.86-1	9.02-1	7.67-1	1.07+0
21.200	7.50-1	3.93-1	9.27-2	1.16-2	4.74-1	-5.00-1	6.57-1	1.09+0	7.53-1
21.240	4.63-1	3.00-1	9.35-2	6.43-1	7.80-1	8.60-1	8.94-1	-4.39-1	9.49-1
21.280	7.45-1	3.44-1	1.16-1	6.88-1	9.04-1	-4.50-1	1.12+0	1.91+0	1.38+0
21.320	3.94-1	4.61-1	9.96-2	4.65-1	5.03-1	1.05+0	6.31-1	1.78-1	6.51-1
21.360	1.01+0	4.76-1	9.88-2	5.24-1	4.90-1	3.31-1	6.19-1	-1.12+0	6.74-1
21.400	3.24-1	5.38-1	1.39-1	3.71-1	6.48-1	1.13+0	7.55-1	-3.43-1	7.85-1
21.440	2.60-1	3.38-1	8.89-2	3.17-1	6.17-1	2.32-1	7.62-1	-1.85-1	8.42-1
21.480	3.47-1	3.79-1	9.99-2	-3.43-1	6.32-1	2.67-1	7.00-1	-8.05-2	9.11-1
21.520	6.07-1	4.17-1	1.23-1	6.26-2	7.03-1	2.21-1	8.28-1	4.44-1	8.68-1
21.560	6.81-1	3.33-1	9.10-2	1.76+0	8.62-1	-3.97-1	9.67-1	1.15+0	1.13+0
21.600	4.48-1	5.98-1	2.18-1	-8.81-1	8.58-1	1.51+0	9.33-1	-1.64-1	6.49-1

En(MeV)	χ^2	A_Q	EA_0	A_2	EA_2	A_4	$EA4$	$A6$	$EA6$
21.640	3.26-1	3.88-1	8.71-2	7.93-1	5.45-1	-6.99-2	6.98-1	6.01-1	8.20-1
21.680	4.56-1	3.62-1	9.60-2	3.76-1	5.99-1	7.73-1	7.56-1	-5.99-1	8.69-1
21.720	2.80-1	3.08-1	8.43-2	3.19-1	6.58-1	1.18+0	8.13-1	-1.51-1	8.38-1
21.760	2.92-1	4.88-1	1.08-1	-1.63-1	4.93-1	1.61-1	6.17-1	-2.72-1	6.41-1
21.800	4.96-1	3.78-1	1.40-1	-2.09-1	9.23-1	1.09-1	9.24-1	-7.82-1	1.20+0
21.840	1.58-1	4.49-1	1.05-1	2.38-1	5.33-1	9.18-1	6.63-1	-4.00-1	6.88-1
21.880	7.79-1	3.05-1	8.57-2	5.03-1	6.90-1	-2.44-1	9.02-1	2.81-2	9.50-1
21.920	8.39-1	4.30-1	1.02-1	2.33-1	5.29-1	6.06-2	6.59-1	-1.30-1	6.81-1
21.960	7.26-1	3.26-1	8.94-2	4.80-1	6.57-1	4.21-1	9.50-1	1.09+0	9.59-1
22.000	8.55-1	3.49-1	1.21-1	-1.45-2	8.31-1	1.05+0	9.70-1	1.65-1	8.39-1
22.040	6.02-1	5.95-1	1.62-1	-5.16-1	6.10-1	2.63-1	6.31-1	-5.36-1	6.01-1
22.080	2.01-1	5.19-1	1.50-1	-7.03-2	7.72-1	5.89-1	7.96-1	3.73-1	9.60-1
22.120	9.46-1	2.62-1	7.81-2	5.09-1	6.99-1	1.22+0	8.99-1	1.72-1	1.06+0
22.160	5.76-1	3.68-1	9.29-2	3.61-1	6.17-1	1.52-2	7.96-1	2.25-1	8.68-1
22.200	6.25-1	3.31-1	9.47-2	-3.24-1	6.82-1	9.82-1	7.68-1	-1.10+0	1.01+0
22.240	4.70-1	3.71-1	9.89-2	-3.80-2	5.99-1	5.17-1	7.01-1	-9.72-1	7.88-1
22.280	1.00+0	4.32-1	1.37-1	3.55-1	7.39-1	5.46-1	8.13-1	3.42-1	8.48-1
22.320	6.96-1	3.70-1	9.85-2	-5.74-2	6.23-1	3.71-1	7.43-1	8.48-1	8.52-1
22.360	8.47-1	4.07-1	1.25-1	-3.06-1	6.77-1	2.35-1	7.63-1	2.61-1	9.05-1
22.400	9.19-1	2.82-1	2.06-1	2.06+0	2.39+0	-2.25+0	2.64+0	8.88-1	2.20+0
22.440	6.91-1	3.30-1	1.00-1	3.03-1	6.62-1	1.01+0	7.61-1	1.81-1	9.55-1
22.480	6.48-1	3.12-1	8.64-2	3.27-1	6.46-1	1.21+0	8.42-1	-2.67-1	8.62-1
22.520	6.48-1	4.54-1	1.47-1	-7.40-2	6.80-1	1.88-1	7.40-1	4.90-1	7.44-1
22.560	6.13-1	4.44-1	1.08-1	-3.77-1	5.37-1	1.02+0	6.12-1	-6.24-1	6.98-1
22.600	3.98-1	4.56-1	9.76-2	4.10-1	4.94-1	2.92-1	5.77-1	-1.51+0	7.20-1
22.640	7.28-1	2.82-1	9.35-2	1.01+0	8.70-1	1.52+0	1.06+0	7.57-1	9.92-1
22.680	5.36-1	2.68-1	9.47-2	2.37-1	8.14-1	-3.09-1	9.86-1	9.14-1	1.08+0
22.720	3.96-1	2.77-1	9.16-2	8.88-1	8.29-1	-6.21-1	1.11+0	3.25-2	1.12+0
22.760	7.49-1	2.65-1	8.58-2	4.92-1	7.53-1	2.25-1	9.59-1	-2.77-1	1.40+0
22.800	2.02-1	3.00-1	1.58-1	5.50-1	1.28+0	2.82-1	1.31+0	-1.28+0	1.64+0
22.840	2.21-1	2.04-1	1.84-1	1.47+0	2.62+0	-6.62-1	2.38+0	1.93+0	2.68+0
22.880	7.11-1	2.75-1	8.82-2	1.64+0	9.76-1	1.09+0	1.10+0	1.35+0	1.22+0
22.920	1.65-1	4.73-1	1.20-1	-4.07-1	5.32-1	2.21-1	6.71-1	3.68-1	8.22-1
22.960	8.21-1	2.88-1	8.91-2	1.37+0	9.41-1	-6.37-1	1.11+0	1.18+0	1.35+0
23.000	5.48-1	3.22-1	1.19-1	-4.32-1	8.20-1	6.95-1	8.73-1	4.83-1	7.98-1
23.040	6.13-1	4.02-1	1.07-1	-4.99-1	6.40-1	8.92-1	7.08-1	-9.99-1	8.12-1
23.080	6.44-1	2.75-1	9.34-2	3.09-1	7.72-1	8.74-1	9.15-1	-1.16-1	1.17+0
23.120	5.90-1	3.18-1	8.63-2	5.34-1	6.22-1	3.63-1	7.35-1	-7.86-1	8.63-1
23.160	5.75-1	3.90-1	1.54-1	-2.20-1	8.22-1	2.86-1	8.08-1	4.60-1	9.19-1
23.200	1.34+0	3.77-1	1.45-1	-5.73-1	8.49-1	6.70-1	8.21-1	-1.06+0	1.09+0
23.240	5.41-1	4.36-1	2.06-1	-4.44-1	1.07+0	9.51-1	1.19+0	-8.63-1	9.88-1
23.280	5.06-1	2.97-1	1.06-1	5.50-1	9.66-1	5.79-1	1.36+0	-1.13-1	1.22+0
23.320	1.01+0	3.49-1	1.06-1	5.95-1	8.42-1	1.27+0	9.31-1	4.72-1	1.05+0
23.360	6.77-1	2.60-1	9.93-2	-9.40-2	8.97-1	8.78-1	1.04+0	-3.95-1	1.09+0
23.400	5.55-1	3.53-1	1.60-1	-8.79-1	1.08+0	1.18+0	1.12+0	-6.89-1	8.95-1
23.440	9.80-1	2.99-1	1.03-1	6.35-1	8.94-1	-2.81-1	1.06+0	-4.64-2	1.21+0
23.480	4.75-1	2.38-1	1.93-1	1.65+0	2.36+0	-1.27+0	2.38+0	1.18+0	2.04+0
23.520	2.62-1	2.87-1	8.07-2	7.71-1	7.02-1	7.99-1	8.50-1	-6.57-1	1.04+0
23.560	8.04-1	2.43-1	8.45-2	6.87-1	8.55-1	8.16-1	1.01+0	4.97-1	1.10+0
23.600	7.99-1	2.86-1	1.16-1	-1.08-1	9.83-1	8.63-1	1.13+0	-6.66-2	1.19+0
23.640	7.77-1	2.53-1	8.99-2	-8.48-2	7.76-1	5.74-1	8.73-1	-3.41-1	9.78-1
23.680	1.06+0	3.18-1	8.29-2	1.20+0	7.36-1	1.22+0	8.82-1	2.42-1	8.43-1
23.720	6.40-1	4.25-1	1.47-1	2.64-1	7.96-1	2.73-1	9.17-1	-6.20-1	1.26+0
23.760	6.06-1	3.30-1	1.18-1	-2.47-1	8.49-1	1.53-1	9.58-1	-9.18-2	1.40+0
23.800	1.42+0	3.74-1	1.04-1	-4.43-1	6.57-1	9.99-1	7.22-1	4.04-1	8.60-1
23.840	2.79-1	4.46-1	1.50-1	1.86-1	6.18-1	9.04-1	7.35-1	1.27+0	1.30+0
23.880	4.46-1	3.80-1	1.00-1	4.94-1	6.55-1	7.79-1	8.07-1	1.48-1	1.13+0
23.920	4.21-1	3.17-1	8.70-2	4.14-1	6.50-1	7.31-1	8.00-1	-8.25-1	8.27-1
23.960	4.56-1	2.55-1	9.46-2	2.07-1	8.42-1	-2.75-1	1.10+0	7.79-1	1.27+0
24.000	1.67-1	3.27-1	1.11-1	-8.23-2	7.84-1	7.18-1	8.76-1	1.87-1	9.02-1
24.040	5.80-1	4.09-1	1.31-1	5.04-1	7.97-1	-8.16-1	1.05+0	1.16+0	1.04+0
24.080	9.20-1	4.89-1	2.41-1	-9.91-1	1.23+0	1.46+0	1.22+0	-8.56-1	1.07+0
24.120	3.96-1	2.99-1	1.10-1	2.85-1	7.83-1	9.82-1	9.31-1	-7.27-1	1.24+0
24.160	7.45-1	4.35-1	1.37-1	-6.13-1	7.50-1	8.28-1	8.13-1	-1.04+0	8.18-1
24.200	1.49-1	2.56-1	1.03-1	-8.16-2	8.99-1	1.30+0	1.13+0	-4.90-1	1.10+0
24.240	3.72-1	2.28-1	1.50-1	1.22+0	1.71+0	-4.41-1	1.72+0	-1.60-1	1.80+0

En(MeV)	χ^2	A_Q	EA_0	A_2	EA_2	$A4$	$EA4$	$A6$	$EA6$
24.280	5.11-1	3.88-1	1.30-1	-4.66-1	7.93-1	5.45-1	8.77-1	-1.20+0	9.07-1
24.320	4.16-1	2.46-1	1.92-1	1.61+0	2.30+0	-7.31-1	2.13+0	1.24+0	2.07+0
24.360	3.67-1	2.34-1	8.68-2	8.54-1	9.69-1	-8.73-1	1.22+0	6.71-1	1.46+0
24.400	4.75-1	2.68-1	8.39-2	4.26-1	8.07-1	8.33-1	1.01+0	6.54-1	1.04+0
24.440	6.94-1	3.40-1	9.82-2	-3.75-1	6.67-1	1.22+0	7.67-1	4.52-3	8.25-1
24.480	1.82-1	2.86-1	1.18-1	-3.22-1	8.94-1	1.06+0	1.03+0	-6.48-1	1.03+0
24.520	8.92-1	3.04-1	8.57-2	4.47-1	6.73-1	1.05+0	8.52-1	2.03-1	8.86-1
24.560	5.85-1	3.27-1	1.11-1	6.56-1	7.71-1	6.55-2	8.82-1	-1.05-1	1.02+0
24.600	6.14-1	2.66-1	9.19-2	2.07-1	8.29-1	1.12+0	9.97-1	7.24-1	1.31+0
24.640	1.18-1	2.96-1	8.58-2	1.77-1	6.77-1	3.21-1	8.38-1	-3.28-1	9.82-1
24.680	3.01-1	3.54-1	1.03-1	-8.53-1	7.33-1	1.00+0	7.27-1	7.11-2	9.18-1
24.720	3.70-1	2.90-1	8.25-2	1.22-1	6.46-1	1.75-1	7.57-1	-1.37+0	1.06+0
24.760	2.20-1	3.70-1	1.03-1	7.33-1	6.55-1	6.34-1	7.81-1	-8.17-2	9.12-1
24.800	3.51-1	3.73-1	1.22-1	-3.83-1	7.48-1	6.09-1	8.19-1	2.37-1	7.50-1
24.840	2.25-1	2.84-1	2.28-1	9.18-1	2.27+0	-2.56-1	2.20+0	2.16+0	2.62+0
24.880	8.48-1	2.83-1	8.40-2	-5.88-2	6.96-1	-3.40-1	9.51-1	2.09-1	9.32-1
24.920	2.04-1	2.81-1	9.87-2	2.58-1	7.78-1	6.36-1	9.26-1	-8.36-1	1.05+0
24.960	3.40-1	3.00-1	1.08-1	5.11-1	7.87-1	7.94-2	8.77-1	-1.13-2	1.02+0
25.000	4.16-1	3.30-1	1.18-1	3.94-3	8.34-1	1.30+0	1.02+0	-3.97-2	8.92-1
25.040	2.90-1	3.69-1	1.34-1	-8.20-1	9.05-1	9.77-1	1.07+0	-2.90-1	9.55-1
25.080	5.22-1	3.04-1	9.12-2	-2.16-1	7.17-1	5.68-1	8.31-1	7.97-1	9.70-1
25.120	7.61-1	2.68-1	1.05-1	4.01-1	1.11+0	-2.81-1	1.54+0	9.37-1	1.39+0
25.160	7.97-1	4.16-1	1.78-1	-4.94-1	9.55-1	1.37+0	1.10+0	-5.76-2	9.48-1
25.200	7.21-1	2.91-1	1.30-1	-1.07+0	1.22+0	9.89-1	1.16+0	-1.05+0	1.45+0
25.240	5.12-1	2.10-1	9.89-2	-3.78-1	1.29+0	6.31-1	1.27+0	-1.03+0	1.93+0
25.280	4.31-1	2.28-1	8.27-2	7.73-1	9.76-1	3.98-1	1.13+0	7.55-1	1.30+0
25.320	4.13-1	3.00-1	8.43-2	1.04-1	6.34-1	2.19-1	8.04-1	6.56-1	1.02+0
25.360	6.66-1	2.34-1	8.77-2	-3.54-1	1.01+0	-2.87-1	1.17+0	-8.69-1	1.45+0
25.400	5.15-1	4.03-1	1.22-1	-3.14-1	6.82-1	4.25-1	7.64-1	3.42-1	8.40-1
25.440	4.24-1	2.88-1	1.03-1	4.55-1	8.23-1	8.24-1	1.06+0	-4.96-1	1.21+0
25.480	4.25-1	1.23-1	1.42-1	2.83+0	4.49+0	-2.80+0	4.60+0	3.44+0	5.29+0
25.520	3.48-1	4.88-1	5.59-1	-5.38-1	2.63+0	1.45+0	2.61+0	4.05-1	1.53+0
25.560	5.46-1	4.84-1	2.21-1	-6.06-1	1.14+0	1.30+0	1.10+0	-2.61-1	1.08+0
25.600	4.97-1	3.16-1	1.03-1	5.84-1	8.01-1	3.24-1	9.17-1	-1.83-1	1.08+0
25.640	3.64-1	3.83-1	1.23-1	-3.99-1	7.15-1	5.50-1	8.15-1	7.51-1	9.17-1
25.680	4.31-1	2.19-1	7.82-2	-4.19-1	9.44-1	8.66-1	1.13+0	-4.01-1	1.29+0
25.720	5.23-1	2.98-1	1.51-1	-2.84-1	1.37+0	5.77-2	1.18+0	-1.87+0	2.00+0
25.760	3.91-1	1.02-1	1.39-1	2.89+0	5.23+0	-1.65+0	4.57+0	4.22+0	7.02+0
25.800	5.39-1	2.31-1	9.34-2	-1.55-2	9.63-1	1.11+0	1.26+0	2.94-1	1.07+0
25.840	7.56-1	2.74-1	7.74-2	5.40-1	7.78-1	-1.95-1	9.99-1	1.07+0	1.21+0
25.880	2.17-1	3.98-1	1.27-1	-4.36-1	7.40-1	6.98-1	8.37-1	-6.08-1	8.18-1
25.920	5.50-1	2.19-1	1.04-1	2.52-1	1.13+0	9.54-1	1.18+0	8.56-1	1.49+0
25.960	1.12+0	3.62-1	2.28-1	-1.07-1	1.45+0	1.41-1	1.47+0	-1.32-1	1.34+0
26.000	3.15-1	3.80-1	9.51-2	2.04-1	5.14-1	-1.58-1	7.95-1	4.77-1	8.40-1
26.040	8.57-1	2.80-1	1.10-1	-4.22-1	1.53+0	9.48-1	1.29+0	-6.47-1	1.88+0
26.080	5.43-1	3.40-1	9.83-2	7.06-2	6.19-1	-2.97-1	8.02-1	7.39-1	9.38-1
26.120	1.98-1	3.65-1	1.28-1	2.11-1	6.35-1	-1.52-1	8.57-1	1.55+0	1.39+0
26.160	6.69-1	4.22-1	1.33-1	-8.18-1	7.33-1	1.16+0	7.94-1	-7.73-3	6.58-1
26.200	8.15-1	2.85-1	1.11-1	-3.70-2	1.01+0	1.45+0	1.34+0	2.96-1	1.09+0
26.240	2.43-1	2.28-1	8.71-2	3.89-1	8.95-1	8.76-1	1.03+0	-6.65-1	1.25+0
26.280	5.31-1	3.66-1	1.23-1	-9.47-1	8.34-1	1.15+0	8.70-1	-9.86-2	8.97-1
26.320	3.99-1	3.76-1	2.24-1	-7.30-1	1.53+0	1.51+0	1.50+0	-4.20-1	1.36+0
26.360	4.20-1	4.51-1	1.38-1	-4.17-1	7.14-1	7.33-1	8.27-1	-3.15-1	7.50-1
26.400	8.35-1	1.10-1	1.41-1	5.94+0	8.64+0	-5.50+0	8.53+0	7.30+0	1.07+1
26.440	9.01-1	3.12-1	1.19-1	-7.64-1	9.42-1	1.40+0	1.04+0	-9.55-1	1.07+0
26.480	8.78-1	4.97-1	2.00-1	-1.03+0	9.71-1	1.06+0	8.91-1	-8.43-1	1.05+0
26.520	2.55-1	2.46-1	8.27-2	1.09-1	7.77-1	1.05+0	1.07+0	-6.81-1	1.08+0
26.560	1.57-1	3.00-1	9.55-2	7.30-1	7.85-1	6.97-1	8.42-1	-1.04+0	1.07+0
26.600	1.00+0	2.90-1	1.07-1	2.86-1	9.19-1	-1.19-1	1.34+0	-4.40-1	1.39+0
26.640	2.55-1	3.39-1	2.54-1	-4.22-1	7.95-1	2.67-1	1.40+0	-1.48-1	2.91+0
26.680	2.54-1	2.36-1	9.74-2	-7.39-1	1.42+0	1.10+0	1.35+0	-7.92-1	1.89+0
26.720	5.74-1	2.06-1	9.64-2	4.56-1	1.13+0	5.31-1	1.31+0	1.93-1	1.20+0
26.760	2.61-1	2.66-1	1.11-1	-4.42-1	9.54-1	9.44-1	1.06+0	-4.06-1	1.01+0
26.800	3.39-1	2.16-1	8.89-2	2.86-1	1.02+0	5.71-1	1.15+0	4.61-1	1.23+0
26.840	9.00-2	1.46-1	1.56-1	3.33+0	4.56+0	-3.80+0	5.52+0	2.44+0	4.56+0
26.880	4.61-1	2.01-1	9.57-2	2.76-1	1.25+0	9.40-1	1.35+0	3.09-1	1.42+0

En(MeV)	χ^2	A_Q	EA_0	A_2	EA_2	$A4$	$EA4$	$A6$	$EA6$
26.920	5.60-1	2.76-1	1.24-1	3.89-1	8.53-1	1.14-1	1.15+0	9.25-1	1.67+0
26.960	2.08-1	2.44-1	9.96-2	2.76-3	1.04+0	4.01-1	1.40+0	-1.18-1	1.27+0
27.000	2.60-1	3.20-1	9.90-2	-7.20-1	7.48-1	9.49-1	7.90-1	-1.50-1	8.68-1
27.040	1.17-1	1.01-1	1.42-1	3.92+0	6.73+0	-4.88+0	8.27+0	4.29+0	7.62+0
27.080	3.38-1	1.57-1	1.47-1	1.69-1	2.84+0	-3.13-1	2.94+0	-4.31-1	3.10+0
27.120	2.60-1	2.46-1	1.07-1	2.36-1	9.39-1	-8.09-2	1.18+0	2.56-1	1.28+0
27.160	6.52-2	3.08-1	1.27-1	1.70-1	8.35-1	-1.01+0	1.20+0	1.75+0	1.58+0
27.200	1.84-1	-9.47-1	8.14-1	-3.20+0	3.42+0	2.91+0	3.22+0	-2.04+0	2.10+0
27.240	3.96-1	2.22-1	7.61-2	-2.49-1	9.27-1	7.55-1	1.02+0	-1.09+0	1.52+0
27.280	5.22-1	3.19-1	1.17-1	-4.61-1	8.46-1	9.62-1	9.35-1	-1.11-1	9.12-1
27.320	7.03-1	1.46-1	1.40-1	1.27+0	2.82+0	-8.49-1	2.71+0	2.00-1	2.54+0
27.360	6.55-1	2.52-1	8.30-2	-1.88-1	7.78-1	8.17-1	8.74-1	-2.39-1	1.14+0
27.400	2.95-1	7.02-1	5.51-1	-1.20+0	1.85+0	1.15+0	1.54+0	-5.91-1	9.07-1
27.440	4.50-1	2.22-1	9.07-2	5.17-2	9.52-1	8.14-1	1.11+0	9.51-2	1.18+0
27.480	5.11-1	2.68-1	1.12-1	-1.29-1	9.68-1	1.06+0	1.09+0	1.71-2	1.06+0
27.520	5.18-1	2.93-1	1.45-1	-3.26-1	1.07+0	3.45-1	1.19+0	1.66-1	1.07+0
27.560	7.06-1	2.47-1	8.22-2	-2.34-1	7.93-1	1.23+0	9.45-1	-5.66-1	9.83-1
27.600	3.36-1	1.70-1	1.65-1	2.84+0	3.85+0	-2.19+0	4.00+0	1.96+0	3.78+0
27.640	5.01-1	9.22-2	1.39-1	4.83+0	8.23+0	-4.68+0	8.30+0	4.74+0	8.13+0
27.680	4.62-1	2.25-1	1.05-1	1.39-1	1.04+0	-1.79-1	1.16+0	1.40+0	1.67+0
27.720	8.24-1	3.33-1	1.27-1	-4.54-1	8.29-1	7.48-1	8.40-1	-6.19-1	1.12+0
27.760	1.08+0	3.15-1	1.53-1	-4.30-2	1.17+0	8.58-1	1.50+0	4.54-1	1.28+0
27.800	1.25-3	2.86-1	1.22+0	-2.62-2	1.05+1	-8.63-1	9.68+0	1.94-2	7.18+0
27.840	3.31-1	1.73-1	1.46-1	2.23+0	2.77+0	-9.50-1	2.50+0	1.77+0	2.71+0
27.880	2.63-1	3.01-1	1.15-1	-2.60-1	9.65-1	4.29-1	1.15+0	2.63-1	1.25+0
27.920	4.23-1	-1.46-1	4.59-1	-5.59+0	1.89+1	4.15+0	1.46+1	-3.56+0	1.20+1
27.960	8.69-1	4.40-1	1.62-1	-6.05-1	7.36-1	-2.59-1	1.04+0	1.33+0	1.41+0
28.000	5.42-1	9.86-2	6.58-1	2.84+0	2.46+1	-2.66-1	1.44+1	1.44+0	1.44+1
28.040	4.67-1	2.68-1	1.12-1	-3.39-1	9.89-1	8.25-1	1.12+0	-2.93-1	1.01+0
28.080	2.00-1	2.33-1	9.83-2	3.08-2	1.05+0	1.11+0	1.26+0	1.11-1	1.49+0
28.120	3.25-1	3.40-1	1.56-1	-5.19-1	9.55-1	8.70-1	1.02+0	-2.04-3	1.10+0
28.160	2.27-1	1.74-1	1.42-1	4.85-1	1.93+0	8.89-1	2.02+0	1.62-1	1.99+0
28.200	6.06-1	4.62-1	2.00-1	-2.87-1	6.98-1	-7.92-1	1.26+0	1.07+0	1.42+0
28.240	2.96-1	3.57-1	1.26-1	4.70-1	7.64-1	-3.02-1	1.54+0	1.29+0	1.60+0
28.280	3.60-1	2.21-1	7.65-2	6.67-2	7.78-1	5.33-1	9.24-1	8.54-2	1.28+0
28.320	3.31-2	1.46-1	7.87-1	1.94+0	1.59+1	-1.48+0	1.43+1	1.23+0	1.02+1
28.360	3.63-1	2.17-1	1.03-1	1.83-1	1.08+0	2.29-1	1.25+0	-1.00+0	1.47+0
28.400	2.97-1	2.52-1	1.14-1	-3.25-2	1.14+0	1.39+0	2.16+0	-9.33-1	1.51+0
28.440	6.37-1	2.07-1	8.32-2	3.71-1	1.22+0	4.80-1	1.40+0	2.72-1	1.75+0
28.480	6.29-1	2.04-1	8.66-2	-2.23-1	1.04+0	6.74-1	1.18+0	-4.44-1	1.43+0
28.520	3.55-1	3.10-1	1.51-1	-5.22-1	1.07+0	8.64-1	1.09+0	1.60-1	9.78-1
28.560	2.60-1	3.16-1	1.38-1	5.65-1	1.01+0	1.35+0	1.11+0	-5.86-1	1.03+0
28.600	3.03-1	2.52-1	9.57-2	3.15-1	9.28-1	3.94-1	1.05+0	-2.69-1	1.22+0
28.640	6.19-1	2.45-1	8.63-2	1.62-1	1.07+0	1.29+0	1.28+0	2.34-1	1.23+0
28.680	2.61-1	2.76-1	8.77-2	1.38-3	7.71-1	1.12+0	1.03+0	-4.29-1	9.98-1
28.720	5.07-1	2.76-1	1.35-1	-5.85-1	1.14+0	1.28+0	1.24+0	-3.73-1	1.03+0
28.760	1.83-1	3.06-1	1.13-1	-3.51-1	8.70-1	5.55-1	9.73-1	5.77-1	9.90-1
28.800	2.27-1	2.38-1	1.06-1	6.03-1	1.03+0	6.22-1	1.13+0	-4.53-1	1.25+0
28.840	2.17-1	2.91-1	1.11-1	-4.98-1	8.91-1	1.28+0	1.04+0	-3.38-1	8.79-1
28.880	5.03-1	2.73-1	1.34-1	-4.61-1	1.13+0	1.03+0	1.20+0	-5.16-1	1.03+0
28.920	1.39-1	1.82-1	8.15-2	2.18-1	1.15+0	2.39-1	1.30+0	-7.16-2	1.48+0
28.960	5.38-1	7.11-1	5.47-1	-1.25+0	1.83+0	1.14+0	1.49+0	3.92-2	7.58-1
29.000	2.93-1	2.48-1	8.99-2	3.05-1	8.93-1	1.76-1	1.01+0	-1.04+0	1.31+0
29.080	2.68-1	4.56-1	2.27-1	-7.95-1	1.14+0	1.02+0	1.23+0	-1.91-1	9.72-1
29.120	3.09-1	2.00-1	1.10-1	-6.79-2	1.20+0	1.16+0	1.45+0	4.89+0	4.29+0
29.160	2.28-1	5.87-1	6.32-1	-1.28+0	2.79+0	1.21+0	2.57+0	-3.58-1	1.52+0
29.200	3.77-1	1.05+0	1.66+0	-1.64+0	4.14+0	1.48+0	3.45+0	-6.44-1	1.59+0
29.240	3.35-1	2.43-1	7.96-2	3.11-2	7.60-1	7.77-1	9.22-1	3.65-2	9.90-1
29.280	1.40-1	3.68-1	1.38-1	-2.47-1	8.37-1	4.12-1	1.03+0	-3.86-1	1.15+0
29.320	2.89-1	2.24-1	1.06-1	-1.09-1	1.18+0	-6.12-1	1.52+0	1.01-2	1.71+0
29.360	3.32-1	3.29-1	1.54-1	-2.08-1	9.89-1	1.39+0	1.16+0	-1.04+0	1.48+0
29.400	3.09-1	-2.41-1	1.23+0	-5.17+0	2.93+1	5.35+0	2.95+1	-2.66+0	1.61+1
29.440	4.12-1	-7.22-2	6.15-1	-1.16+1	1.01+2	8.14+0	7.12+1	-8.39+0	7.30+1
29.520	4.34-1	2.15-1	9.74-2	-3.15-1	1.32+0	-4.55-2	1.57+0	-5.11-1	1.71+0
29.560	4.23-1	2.24-1	1.41-1	1.37-1	1.46+0	8.57-1	1.55+0	-7.50-1	1.63+0
29.600	2.41-1	2.09-1	8.21-2	9.92-2	9.26-1	1.07+0	1.67+0	-3.15-1	1.58+0

En(MeV)	χ^2	A_Q	EA_0	A_2	EA_2	$A4$	$EA4$	$A6$	$EA6$
29.640	9.64-1	1.89-1	1.79-1	7.14-1	3.20+0	9.01-1	4.18+0	2.05-1	4.45+0
29.680	1.10+0	3.07-1	1.50-1	-6.01-1	9.99-1	8.23-1	1.10+0	-1.24+0	1.85+0
29.720	7.79-1	-3.03-1	5.00-1	-4.07+0	7.71+0	3.16+0	6.29+0	-2.72+0	5.10+0
29.760	5.39-1	3.50-1	1.84-1	-5.54-1	1.27+0	8.79-1	1.23+0	-7.07-1	1.24+0
29.800	1.93-1	2.26-1	1.12-1	8.73-2	1.03+0	4.36-1	1.19+0	-7.02-1	1.60+0
29.840	2.68-1	6.85-1	6.51-1	-1.25+0	2.40+0	1.10+0	2.17+0	-7.24-2	1.18+0
29.920	7.22-2	2.04-1	9.88-2	-2.99-1	1.06+0	9.97-1	1.16+0	2.26-1	2.44+0
29.960	2.26-1	-1.84+0	2.43+0	-2.33+0	4.08+0	1.83+0	3.20+0	-8.44-1	1.47+0
30.000	3.76-1	3.80-1	5.21-1	-8.48-1	3.24+0	1.12+0	2.93+0	-4.45-1	2.00+0
30.040	2.61-1	4.52-3	6.47-1	1.52+2	2.18+4	-7.22+1	1.03+4	1.49+2	2.13+4
30.080	3.30-1	2.46-1	1.88-1	1.75-1	1.79+0	8.67-1	1.94+0	2.11-1	1.57+0
30.160	5.59-1	1.66-1	1.57-1	2.11+0	3.45+0	7.78-1	2.77+0	1.52+0	3.14+0
30.200	7.77-2	2.29-1	1.38-1	-4.45-1	1.41+0	1.32+0	1.70+0	-1.43-1	1.25+0
30.240	1.60-1	1.50-1	1.61-1	2.48+0	3.78+0	-2.29+0	4.18+0	1.50+0	3.49+0
30.320	5.91-1	1.42-1	1.44-1	1.55+0	3.12+0	-2.53-1	3.14+0	8.48-1	2.69+0
30.360	6.02-1	2.17-1	1.61-1	1.24-1	1.77+0	1.36+0	2.31+0	-3.04-1	1.91+0
30.400	5.77-1	2.23+0	4.31+0	-1.68+0	4.98+0	1.21+0	3.53+0	-3.01-1	1.20+0
30.440	5.01-1	1.94-1	8.48-2	-3.51-1	1.42+0	1.18+0	1.91+0	-1.48+0	2.69+0
30.480	5.29-1	3.00-1	2.04-1	-9.40-1	1.83+0	1.37+0	2.16+0	-6.47-1	1.63+0
30.560	4.97-1	1.54-1	1.83-1	5.05-1	4.90+0	1.15-1	5.30+0	4.59-1	6.65+0
30.600	4.48-1	2.88-1	4.18-1	-4.03-1	3.18+0	1.29+0	3.40+0	-6.25-1	2.22+0
30.680	4.24-2	2.65-1	9.94-2	1.05-1	9.15-1	-1.07+0	1.36+0	-1.56+0	1.96+0
30.720	2.58-1	3.22-1	1.09-1	-2.58-1	7.81-1	9.63-1	8.84-1	5.92-1	9.71-1
30.760	2.60-1	1.08-1	1.49-1	3.77+0	6.84+0	-1.57+0	4.52+0	4.88+0	9.02+0
30.800	9.66-2	1.98-1	8.65-2	3.85-1	1.05+0	1.23+0	1.35+0	6.15-2	1.60+0
30.840	3.04-1	1.65-1	1.35-1	3.90-1	2.04+0	1.69-1	1.98+0	7.97-1	2.20+0
30.880	5.38-1	1.55-1	1.39-1	4.41-1	2.43+0	3.09-1	2.10+0	3.89-2	2.58+0
30.920	1.85-1	2.89-1	1.97-1	-2.65-1	1.24+0	4.40-1	1.27+0	-6.42-1	1.95+0
30.960	2.60-1	2.65-1	7.19-1	1.75+0	7.27+0	-6.66-1	5.62+0	-5.13-1	4.45+0